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Self-Reported Racism, Transphobia, Their Intersection and Impact on Past-Year HIV Related Sexual Risk Behaviour

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SELF-REPORTED RACISM, TRANSPHOBIA, THEIR INTERSECTION AND IMPACT ON PAST-YEAR HIV-RELATED SEXUAL RISK BEHAVIOUR

(Spine Title: Racism and Transphobia: Impact on HIV-Related Sexual Risk Behaviour)

(Monograph)

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Abstract

Background: Studies examining HIV prevalence and risk behaviors within trans subgroups have identified them as high risk. Yet few studies have addressed how discrimination impacts this prevalence. Minority stress theory suggests that there is a relationship between minority stress and HIV-related risk behaviour. We hypothesize that multiple minority statuses may result in discriminatory experiences, specifically self-reported transphobia and racism in synchrony with other attributes, that interact to alter past-year HIV-related risk behaviour.
Methods: Data came from the Trans PULSE project, a mixed-methods, community-based research study that used respondent-driven sampling to access 433 trans Ontarians, between May 2009 and May 2010. RDSAT 6.0 was used to produce descriptive statistics and SAS 9.2 was used for regression analyses.
Results: Transphobia was commonly perceived as 97.8% (C.I. = 97.1%, 100.0%) of trans Ontarians reported at least one experience of transphobia, while 44.7% (C.I. = 36.6%, 52.5%) reported at least one instance of racism. Analysis of a multivariable logistic regression model predicting past-year HIV-related sexual risk behaviour among trans persons hints at an interaction between racism and sexual orientation and racism and ethnicity, as well as, transphobia and sexual orientation and transphobia and medical transition status, suggesting that transphobia and racism affects past-year HIV-related sexual risk behaviour differently across these groups.
Conclusions: The relationship between self-reported racism, self-reported transphobia and past-year HIV-related sexual risk behaviour is complex and interactive but limited. Our results contextualized HIV-related sexual risk behaviour showing the potential role of discrimination in determining sexual risk for trans persons.

Keywords: Racism, Transphobia, Sexual Risk Behaviour, Minority Stress, Interaction, Multiple Logistic Regression

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Abbreviations

AH – affiliation homophily

CBR – community-based research

CI = confidence interval

CI_{diff} = confidence interval around the difference

DH – degree homophily

FTM – female-to-male spectrum

H – homophily

LICO – low-income cut-off

MOVER – method of variance recovery

MTF – male-to-female spectrum

MSM – men who have sex with men

POC – person of colour

RDS – respondent-driven sampling

RDSAT – Respondent Driven Sampling Analysis Tool

SRS – sex reassignment surgery

1. Introduction

1.1 Literature Review

1.1.1 Overview

The sexual lives of trans persons may be affected by such socially oppressive forces as racism and transphobia. According to Williams, Neighbors, and Jackson[1], experiences of racial or ethnic discrimination produce negative affective responses that may produce a wide range of negative physical and mental health outcomes. Diaz, Ayala and Bein[2] showed that social oppression in the form of racism and homophobia produces psychological distress which increases the likelihood of participating in difficult sexual situations, including sexual activity as a means of alleviating feelings of isolation and depression, which may result in increased risk of HIV. According to Kammerer[3], the need for identity affirmation and the quest for a feminine body partially drive the HIV-related behavioural risk of some male-to-female (MTF) trans persons. There is little research on how socially oppressive forces, like racism and transphobia, may interact to influence sexual behaviour and to potentially promote HIV-related risk behaviour within trans communities. Though individuals cannot be reduced to either oppressed or oppressor, minority stress theory suggests that those occupying socially marginal statuses, whether by race, gender, or sexual orientation are more likely to experience discrimination, which in turn may negatively impact upon mental health and may also promote HIV-related risk behaviour[4,5]. We intend to examine how reports of racism and transphobia may impact upon this risk behaviour.

1.1.2 Stress

Stress can be described as "any condition having the potential to arouse the adaptive machinery of [an] individual"[6 (163)]. The stressor is the causative factor, while, stress is the state which exists between the stressor, which precipitates the stress state, and a consequent re-adjustment by the individual[7,8]. Stress originates from multiple sources including the natural and man-made environments, the social environment, the culture of the environment, and the internal, psychological or biophysical environment[9]. These are events, conditions or phenomena which require a system to adapt to a new situation or circumstance. This adaptation may be a positive resolution of stress or may be a dysfunctional or maladaptive response[9]. Hans Selye[8] studied the effects

of stress on the brain functions of animals. He examined the biological effects of exposure to stressful stimuli, which he termed nocuous agents[8]. His description of the General Adaptation Syndrome laid the foundation for a large body of research on stress and biological functioning[10]. Thoits[11] describes five major findings concerning stress. First, according to Thoits[11], stressors are negative events, chronic strains, or traumas that can have significant damaging effects on physical and mental health; 2), differential exposure to stressful experiences produces inequalities in health by gender, race or ethnicity, marital status, or other social status markers; 3) minority group members are further exposed to and can be harmed by the stress of discrimination; and, 4) stressors accumulate over the course of a lifetime as well as across generations, thereby increasing the health gaps between advantaged and disadvantaged members of society[11]. Finally according to Thoits[11], high levels of mastery, self-esteem, or social support can moderate the impact of stressors on health and well-being. In this report, self-reported racism and transphobia will be conceptualized as stressors that can produce inequalities in health. This can occur through both structural and psychosocial pathways. Structural pathways are those imposed by societal institutions that exist because of the way society distributes rewards and opportunities, while psychosocial pathways are those that operate largely within the individual. These determine psychobiological processes, modify behaviours or change individual lifestyles[12]. This report will focus on some potential psychosocial pathways through which self-reported racism and transphobia may impact upon HIV-related vulnerability.

1.1.3 Minority Stress Theory

According to Brooks[9 (p56)] "a minority group may be defined as any group of people who, on the basis of one characteristic, are categorically ascribed inferior status, denied equal access to legitimate socioeconomic opportunities, and denied equal participation and fair representation in major societal institutions. This condition as defined here has persisted over time, is systematically embedded in the culture, and requires institutional change as opposed to individual change for alleviation and prevention". Minority stress extends out of social stress theory, and is the "excess stress to which individuals from stigmatized social categories are exposed as a result of their social, often minority, position"[4 (p3)]. Minority stress is the "discrimination stress" that Thoits[11 (S41)] described. This minority stress is the added stress experienced by those who possess minority group membership, including trans persons, gay, lesbian or bisexual persons, or persons from racial or ethnic groups other than the dominant one. Brooks[9 (p5)] refers to this stress as "surfeit" stress. It can be seen as being the result of a mismatch or conflict between how the dominant culture constructs the world and how the minority culture experiences that world[13]. It can be said, for example, that a world constructed by and for the

White, cisgender (i.e. non trans), heterosexual, middleclass male is neither welcoming nor accepting of the minority individual[14,15]. In short, this minority will not fit, and further is likely to be abused for not fitting. A White person may feel similarly displaced in a country which consists predominantly of Blacks. Lazarus[16 (p234)] describes this "mismatch" between the individual and his or her experience of society as the essence of all social stress. While Shelley[17] describes the trauma of being mis-sexed that trans people experience due to society's presentation of sex as a binary with no in-between possibilities. In the experience of Aboriginal two-spirit persons, this in-between space did exist but was eradicated by the dominant culture through imposition of traditional, Christian ideals via residential schools, for example[17]. According to Shelley[17], prior to colonization two-spirit people were honoured, whereas after colonization they experienced repudiation – i.e. rejection, condemnation, renouncement and repulsion. Brooks[9] further speaks to the imposition of dominant ideology, speaking to the historical ascription of "deviance" or "psychopathology" to the sexual behaviour of lesbians even in the midst of the human rights and feminist movements. It is no wonder then that those accused of not fitting, those indicted of deviance, those shoved to society's margins, often feel increased pressure to conform to dominant society's values, or else to expect and even accept societal abuses due to their non-conformity[4,9,18]. Expectation of rejection or mindfulness in interactions with the dominant culture may even promote interpretation of events as discriminatory, where they otherwise may not be seen as discriminatory[19]. This increased vigilance, too is a type of internal stress, and may, along with more objective stressors, induce dysfunction in those experiencing it first-hand, as well as those experiencing it through group identity, in the case of historical insults[4].

Meyer[4] presents a model of minority stress that can be adapted and applied by us in understanding how stress, in particular that "excess stress" experienced by minority groups, may function to affect health. In articulation of his minority stress model, Meyer[4] reports on three characteristics of minority stress. He purports that minority stress is unique, chronic and socially-based. Being unique, it is "additive to general stressors that are experienced by all people, [such that] stigmatized people are required an adaptation effort above that required of similar others who are not stigmatized"[4 (p3)]. Being chronic, minority stress is associated with stable underlying socio-structural or socio-cultural constructs[4]. Also, because minority stress is socially-based, it therefore has its origins in social processes, institutions, and structures outside of the individual[4]. This is different from the "individual events or conditions that characterize general stressors or biological, genetic, or other non-social characteristics of the person or the group"[4 (p3)]. Minority stress then impacts upon the individual triggering an internal response that flows through three sequential processes. First, there is the occurrence of external, objective stressful events and conditions – of course, this involves some perception and attribution by the

individual, 2) there is an expectation of such events occurring, which requires vigilance or expectancy on the part of the minority individual, and 3) there may be internalization of negative societal attitudes. This is a process in which, "distal social attitudes gain psychological importance through cognitive appraisal and become proximal concepts with psychological importance to the individual"[4 (p3)]. Erving Goffman[20] describes a similar process, which he termed "stigma", in which a person goes through a process of devaluation by society. As a result of becoming "discreditable", a stigmatized individual may come to expect negative judgments from others or may internalize this "devalued social identity"[4,21]. This internalized phobia or self-stigma is "a form of stress that is internal and insidious"[4 (p14)]. This internal stress has the potential to promote negative mental health issues, self-harm, and HIV risk-taking behaviours[4,22]. Thus, this model shows that external pressures can exert internal influence on the individual psyche; an important finding since we will suggest in this report that there are psychobiological pathways to health. It is important to note that these pressures may have similar impact whether real or imagined, if the theorem put forth by W.I. Thomas holds, which states that whatever a person defines as real becomes real in its consequences[23]. Therefore, stigmatizable groups may only need to perceive an insult, whether that insult be objectively real or not, for the psychosocial process which leads to negative health outcomes to occur.

Minority identity can be linked to a variety of stress responses, some negative, some positive, but all adaptive. For example, people identifying as lesbian, gay, bisexual or trans (LGBT), may become vigilant in their interactions with others as an adaptive response to stress, either hiding their identity or internalizing negative views about this identity due to expectations of rejection by dominant society[4]. According to Allport[18 (p145)] "a minority group member has to make many times as many adjustments to his status as does the majority group member... the awareness, the strain, the accommodation all fall more heavily and more frequently on the minority group members". This, according to Brooks[9 (p145)], "leads to the conclusion that interactions with dominant-group members often require minority-group members to maintain a degree of vigilance in regard to the minority component of their identity, and that these interactions increase the frequency of events which require adaptation". On the other hand, stress may trigger a coping response that brings to the forefront the resilience of the individual. For example, a person from the LGBT group may form affiliations within the group that counteract minority stress[4]. Coming out to supportive peers, for example, allows the stigmatized person to experience a social environment in which he or she is not stigmatized, but rather accepted[24]; cohesiveness with the "in-group" then allows "reappraisal" of the stressful condition and often leads to re-affirmation or validation of the stigmatized identity[25]. As Brooks[9 (p153)] put it "threats to self-esteem from more affectively distant social groups are, in effect, minimized or eliminated by the major affiliative resource of positive minority-group

identification", which she claims reduces minority stress by "[providing] refuge from the assumptive world of the majority", and allowing the minority individual to "find suitable partners, feel less socially isolated, receive social and emotional support, learn practical survival tactics". This can be referred to as "minority coping", which is a group-level resource, related to the group's ability to counteract stigma[4]. It is thus important to note that individuals who find themselves either in the minority numerically, or on the margins socially, are not passive victims upon which society acts, but rather are themselves social actors who are able to interact with the world and are able to do so effectively[26,27].

Affirmation of the agency or power of the minority individual, however, should not prevent us from viewing societal judgement and discrimination as a problem that must be abolished[4]. "Viewing the minority person as a resilient actor may come to imply that effective coping is to be expected from most, if not all, of those who are in stressful or adverse social conditions. Failure to cope, failure of resilience, can therefore be judged as a personal, rather than societal, failing", so that "the weight of responsibility for social oppression can shift from society to the individual"[4 (p23)]. However, while empowerment of the individual is important, the responsibility for change must rest on those in positions of power; those individuals who write the laws and policies that define society. This idea is articulated by Thoits[11], who although was primarily concerned with the impact of poverty specifically, and not minority stress in general, said that individual-level coping and support interventions should be made more readily available in order to help people cope with adversity, but that health inequalities should be addressed by programs and policies aimed at macro and meso level structures, thus targeting the structural conditions in society that cause stress, rather than the individual who is exposed to it. The individual level strategy has the ability to ameliorate the effects of stress, but strategies at all levels, including the meso and macro levels have the potential of eradicating the sources of discrimination stress altogether. This is by no means an easy endeavour, since according to Brooks[9], the indicators of historical oppression cannot be abolished by legislation alone because negative beliefs and attitudes may persist well after the elimination of institutional discrimination. Thus change requires intervention at all levels of society, and should be expected to be a slow process.

The elements described by Meyer[4] above are synthesized in a minority stress model (Figure 2) that includes distal and proximal elements ultimately impacting upon health of the individual. Meyer[4] suggests that minority stress is situated within the general social environment and includes such factors as socioeconomic status. Within that environment, also exists a person's minority (or marginalized) status – e.g. trans, Black, poor; depending upon their geographic location. Circumstances in the environment expose the individual to general

stressors e.g. job loss, as well as, to those stressors unique to the minority status e.g. job discrimination[4]. Given the cisnormative, heterosexist structure of North American society, in which people are assumed to be cissexual (i.e. not transsexual), and heterosexual, distal minority stress processes or prejudice events will inevitably occur[4,14,15,28]. Stressors are then perceived and appraised by the individual, and proximal minority stress processes may occur. Appraisal processes are those in which meaning is ascribed to the occurrence of some stressor, e.g., according to Brooks[9 (p75)] "the stress of not getting a job promotion for which one is fully qualified might produce a moderate amount of stress for any individual. If, however, the person not receiving the promotion is a woman and the person receiving the promotion is a man, the meaning of the event to the woman may be affected by its structural implications. If she has experienced previous incidents of denied opportunities in her career on the basis of sex, the current denial of opportunity may have a different meaning for her than for an individual who had not previously experienced sex-based job discrimination". The stress processes that then occur may include expectations of rejection, concealment of one's minority identity (if possible), internalized homophobia in the case of lesbian, bisexual, and gay persons[4] and, I will add, internalized transphobia in the case of trans individuals; or often some combination of all these. In some instances, the minority identity may become a resource that provides to the individual opportunities for positive affiliation, social support and coping that can lessen the effects of stress[4]. Thus, where one individual crumbles under the pressure of minority stress, another may find a strength in his minority affiliations that enhances his self-esteem and his ability to cope with not just minority stress but other types of stress as well. Minority stress may thus have opposite effects in different individuals; increasing maladaptive behaviour by some, and adaptive behaviour by others.

In his model, which we shall adapt to include trans persons, Meyer[4] also describes the characteristics of the minority identity - its prominence, valence and the level of integration with other identities possessed by the person, that can further impact the level of the stress experienced[4,29,30]. According to Meyer[4], prominence or salience of identity, which is the first characteristic of the minority identity, may exacerbate stress. This is because "the more an individual identifies with, is committed to, or has highly developed self-schemas in a particular life domain, the greater will be the emotional impact of stressors that occur in that domain"[30 (p352)]. That is, the more that an individual feels connected to or defined by her race, the more insulting she finds racial slurs, the more outraged she becomes at racial indignations, and the more proud she feels about instances of positive recognition of her race by society at large. Identity valence, the second characteristic, refers to self-evaluation, and can be positive or negative[4]. This is simply how the minority individual views herself – either, as an asset to society or as worthless refuse. As can be easily deduced, negative valence or negative self-evaluation

is predictive of mental health problems and depression[31,32], and potentially poor adaptation and self-harm as well. Finally, the third characteristic of minority identity, integration of the minority identity with other identities, is positive and can lead to self-acceptance and mitigation of stress, as the minority status becomes just one aspect of a rich, complex, "integrated total identity"[4 (p8)]. Insults and degradations in any one aspect of life will not be as influential for the individual.

1.1.4 Minority Stress and HIV

Despite the possibility for positive adaptation, according to the research, minority stress more often has negative repercussions on health and behaviour. Meyer mainly reported on the effects on mental health, e.g. depression and suicide, but other researchers have also studied the effects of this type of stress on other aspects of health. Brooks[9], for example attributed the lower life expectancy, higher infant mortality rates, and higher incidence of blood pressure among Blacks to minority stress, or specifically with institutional racism compounded by poverty. According to Brooks[9 (p83)], reporting on a study that contrasted Blacks and Whites in the same income category, "even when the economic differential is not a factor, the reduced status of minority membership corresponds to higher stress". Other studies have suggested that the experience of greater levels of homonegativity is associated with greater substance use and alcohol consumption[22,33,34,35,36] and these are known to negatively impact health and importantly, to also impede decision-making processes[28]. For instance, Hatzenbeuhler, Nolen-Hoeksema and Erickson[37], undertook a longitudinal study involving 74 gay male caregivers of seriously ill men with AIDS to see if minority stress was independently associated with risk behaviours, as well as psychological distress among the sample of bereaved gay men. These researchers showed that minority stress may result in the promotion of "self-destructive" behaviours, whereby, individuals were more likely to engage in health-risk behaviours such as unprotected anal intercourse and substance use "as a means of coping with minority stress experiences"[37 (p460)]. The researchers looked at the three minority stress processes – expectations of rejection, concealment, and internalized homophobia, and found that "internalized homophobia was significantly associated with both number of unprotected partners and number of times participants engaged in unprotected anal sex over time. Participants who experienced higher levels of internalized homophobia engaged in unprotected anal sex an average of .75 more times and had an average of .11 more unprotected partners than those who were lower in internalized homophobia"[37 (p459)]. Hatzenbeuhler *et al*'s[37] measure of internalized homophobia was self-reported and assessed the extent to which the men were uneasy or uncomfortable with their homosexuality. Johnson, Carrico, Chesney and Morin[38], similarly found that self-reported internalized heterosexism, aka internalized homophobia, was associated with unprotected receptive

anal intercourse with HIV-negative men and with men whose HIV serostatus was unknown by the HIV-positive gay men in their study. It was also associated with non-adherence to antiretroviral medication by these men[38]. Furthermore, according to Meyer[4] researchers undertaking cross-sectional studies have also found associations between HIV risk behaviours and other elements of minority stress as well. We did not measure the proximal stress exposures including internalized racism or internalized transphobia, however, we expect to determine the potential HIV-related impact using mainly the more distal elements of minority stress including self-reported experiences of racism and transphobia.

1.1.5 Racism and Health

Our research report is mainly concerned with the specific minority stressors of racism and transphobia; racism will be described here. Racism may be the essential factor in racial differences in morbidity and mortality, as the patterns of health and disease in society often reflect societal conditions, and its inequities[39]. Structural racism means greater risk of exposure to socioeconomic deprivation, toxic substances, hazardous conditions, social trauma, targeted marketing of harmful commodities and inadequate and degrading medical care[39]. Racism can also be described as "any attitude, action, or institutional structure which subordinates a person or group because of his or their color[40]. According to The United States Commission on Civil Rights[40], "this is true of Negroes, Puerto Ricans, Mexican Americans, Chinese Americans and American Indians". The Commission[40] went on further to say that "white racism subordinates members of all these other groups primarily because they are not white in color, even though some are technically considered to be members of the 'white race' and even view themselves as 'white'". Others define racism "as an institutionalized system of economic, political, social, and cultural relations that ensures that one racial group has and maintains power and privilege over all others in all aspects of life. Individual participation in racism occurs when the objective outcome of behaviour reinforces these relations, regardless of the subjective intent"[41 (p2)].Usually however, those who benefit from the status quo are consciously invested in maintaining it. Finally, the experience of racism can involve exposure to discrimination, e.g. violence, harassment or employment discrimination; or everyday discrimination, e.g. being refused service in an establishment, such as, a restaurant; as well as, the experience of racist attitudes, stereotypes or beliefs, or judgement by others[42]. Our concern is with how these experiences or more specifically, the perception of these, takes a psychosocial pathway to maladaptive health behaviour; in particular increasing behavioural vulnerability to HIV.

Racism is complex. It can be overt or insidious; obvious or hidden. For example, Canada is often described as a harmonious blending of cultures, a unique cultural mosaic, in which multiculturalism is celebrated. However, according to Hier and Bolaria[43], there is a belief that Anglo-Saxon culture represents Canadian culture and immigrants must therefore, make a conscious effort to become more "Canadian" by adopting that dominant culture. This suggests that diversity is not as celebrated as many may believe. So, if trans persons feel the pressure to conform to a gender norm, we also see that racialized individuals may feel pressure to assimilate with the dominant White culture or, in the case of Aboriginal persons may even be forced to, as demonstrated by the aggressive assimilation policies and residential schools forced upon Aboriginals residing in Canada during the 20th century. Hier and Bolaria[43] go on to describe that although most people would condemn racism as wrong, and would claim that minority groups – Chinese, Aboriginals, Blacks – should have equal opportunities in employment and education, immigrants are only accepted in these areas to the extent that they have accepted, embraced and adopted the dominant culture. Those who cannot or who refuse to assimilate will not be able to enjoy those rewards and opportunities offered to the dominant culture as can be seen in the under-representation of non-White immigrants in schools and employment[43].

According to Paradies[42 (p888)] society's systems "produce an unequal distribution of power (and hence resources) in societies based on the notion of race, where race is a social rather than a biological construct related to the notion of essentialized innate phenotypical, ancestral, and/or cultural difference". This inequitable allocation of resources can negatively impact upon health through material deprivation making individuals vulnerable to "all diseases associated with poverty, including tuberculosis, sexually transmitted diseases, and HIV infection"[44 (p208)]. Racism may also impact health through psychosocial pathways, to the extent that it is perceived by the individual and exerts an influence on individual behaviours and interactions. Interestingly, perceived everyday racism has been found to have both positive and negative influences on health behaviour[44,45]. Ford *et al*[45] found that perceived everyday racism was associated with higher odds of HIV testing during an STD clinic visit. As these authors put it "African Americans are not merely victims of racism but also exercise agency within and regarding their social contexts. Those who perceive everyday racism may draw upon health promoting assets relative to their behaviours"[45 (p7)].

Nevertheless, Paradies[42], who conducted a systematic review of 138 empirical quantitative population-based studies of self-reported racism and health, reported that of 613 racism-health associations examined in these articles, only 8 (1%) of them were associated with better health outcomes. Where any association was found, the majority of self-reported racism was associated with negative rather than positive mental and physical

health outcomes[42].Specifically, self-reported racism was found to be associated with more psychological distress, depressive symptoms, obsessive-compulsive symptoms, anxiety, and stress[42]. More often than not self-reported racism was associated with less satisfaction in personal life and work, less satisfaction as a patient, less self-esteem, and worse general mental health[42]. Additionally, although less associations were found between self-reported racism and physical health, it was reported that racism may be associated with increased blood pressure or hypertension, low infant birth weight or decreased gestational age, increased heart rate, diabetes, and increased body mass index, as found in a few of the articles assessed by Paradies[42]. Moreover, Paradies'[42] examination of the literature found an association between self-reported racism and increased cigarette smoking, alcohol (mis)use, and substance (mis)use; while none of the articles reported a negative association between self-reported racism and these health-compromising behaviours, i.e. racism was not found to be associated with a decrease in the prevalence of these behaviours[42]. Although these findings point to the biological mechanisms by which stress due to racism may lead to illness, we will focus our attention on the psychosocial pathways, i.e. the behavioural changes that may occur due to the stress of racism, for the sake of cohesiveness and simplicity.

As discussed in detail in the sections above, minority stress processes may mediate the relationship between societal judgement in the form of racism and poor health outcomes[4]. One factor that was found to attenuate the association between racism and poor health outcomes was having a strong sense of racial or ethnic identity or concept[42]. Interestingly this concept of identity prominence or salience was described as exacerbating stress in the minority stress model[4]. However, it may be that this strong sense of racial/ethnic identity occurs in the context of the "integrated total identity" that Meyer[4 (p8)] found protective. Other factors that lessened the adverse effects of racism on health included participation in traditional activities, spirituality, religious support seeking and instrumental social support, and being hardy or resilient[42]. These "were found to attenuate the adverse effects of self-reported racism on depressive symptoms, psychological distress, and self-assessed health status"[42 (p893)]. Low self-esteem, stressful events, and substance misuse were described as intensifying the harmful effects of self-reported racism on mental health, life satisfaction, and anxiety and depression[42]. Diaz, Ayala, Bein, Henne and Marin[46] found that stressors in the form homophobia, poverty and racism increased the prevalence of psychological symptoms of distress among bisexual Latin men in the US. These authors found that family acceptance, social support, and participation in social activism moderated the impact of the stressors[46]. The intervening variables described by Paradies[42] and Diaz et al[46], including low self-esteem, substance misuse, level of perceived social support, and social activism may also be considered as outcomes that can result from discriminatory experiences. It is conceivable that the negative mental health outcomes described by Paradies[42],

Diaz et al[46] and others may initiate psychosocial processes including internalized racism, which occurs when the stigmatized person accepts negative messages about their abilities and intrinsic worth, potentially leading to maladaptive coping strategies and self-destructive behaviours[47].

1.1.6 The Unequal Distribution of Stress

According to Thoits[11], sociological studies have demonstrated consistent differences in health between different social groups by gender, age, race, marital status, and socioeconomic status due to differential exposure to stress by these groups. Generally speaking, females, the young, people of colour e.g. Hispanic, the unmarried, and the poor are more vulnerable to stress[11]. These structural differences then must be considered as potential moderators of any associations between social stress or oppression and health or behavioural outcomes. Since gender is an important source of difference, gender transition status and medical transition status may also be important for trans persons. Other researchers demonstrate that sexual orientation is another important source of differential stress exposure and differential sex behaviour, as well, with sexual minorities being vulnerable to such phenomena as homophobia[2,46]. Stress researchers have also documented several other factors that can influence the impact of stress in predictable ways. For example, personal resources that individuals turn to when facing chronic stress, act as "stress-buffers", reducing the impact of stress on health and behaviour [11 (pS46)]. Resources acknowledged as particularly important include social support, which "refers to emotional, informational, or practical assistance from significant others, such as family members, friends, or coworkers, which may be actually received from others or simply perceived to be available when needed" [11 (pS46)]. It may be that identity support, acts similarly to social support, and represents a type of emotional-level resource that buffers the negative impact of discriminations stress. Those without these resources may find themselves without the tools to cope with undue social stress. Therefore, in this report, it will be important to attend to the ways in which at least some of these influence the impact of self-reported social stress on HIV-related sexual risk behaviour. We will focus on identifying moderation by gender spectrum, youth status, ethno-racial background, sexual orientation, low income status, medical transition status, social support and identity support.

1.1.7 Heteronormativity, Homophobia, Cisnormativity and Transphobia

A wide variety of identities and sexualities are encompassed by the term "transgender". As an umbrella term, transgender covers a variety of behaviours, characteristics and roles that are thought to transgress conventional gender roles[3,15]. As such, the term has been described as being too "vague" to fully account for the diversity in

people's identities and life experiences[15 (p26)]. Although the term strives to be inclusive, many individuals who may be characterized as transgender by an outsider – or insider depending on your perspective, may in fact not identify with the term – including individuals with intersex conditions, and transsexuals[15]. Instead, "trans", though not unproblematic itself, is a term that may more successfully unite all individuals whose gender identity differs from their biological sex[14,15,17]. The term can be used to denote any individual whose appearance or behaviour falls outside of societal norms[15]. According to Bauer *et al*[14 (p349)], "trans includes transsexual, transitioned, transgender, and gender-queer people, as well as some two-spirit people". If the term trans describes those with any form of gender "dissonance" then the term "cis", "cisgender" or "cissexual" is descriptive of those for whom the gender identity matches with the biological sex[14,15]. Bauer *et al*[14(p356)] describe the pervasiveness of cisnormativity – "the expectation that all people are cissexual, that those assigned male at birth always grow up to be men and those assigned female at birth always grow up to be women". Judith Butler refers to one conceptualization of societal norms as the "heterosexual matrix"[48 (p42)]. While the concept of "heteronormativity", "suggests that society takes heterosexuality to be *normative* in terms of identity, practices and behavior", meaning "that heterosexuality is the median point on the normal curve: not only that which is statistically dominant, but also that which is expected, demanded and always presupposed in society"[49 (p13)]. These terms are not interchangeable, but suggest a similar theme of privilege for those found to be normal by societal standards, and of marginalization of those who cannot or will not fit those norms. According to Brooks[9 (p147)] "the cognitive expectations of majority identified individuals, as encountered in interpersonal transactions, may include the entire gamut of cultural stereotypes, but their common denominator is the assumption of majority-superior and minority-inferior statuses in relation to sex, sex roles, and sociosexual orientation". In general heteronormativity suggests a sexual norm – rules and codes that constrain how and to whom individuals should be attracted or desire; while cisnormativity suggests a gender norm – constraining gender identity and expression; telling individuals who they can be and how they should behave. According to Bauer *et al* [14 (p356)], "cisnormativity disallows the possibility of trans existence or trans visibility" leading to "trans erasure", which is a process of systematic marginalization that "underlie[s], sustain[s], and give[s] rise to the challenges experienced by trans people in their daily lives"[(p350)].

Heteronormativity, then, constructs a world where homophobia is allowed, allowable and even expected, while cisnormativity creates a world that enables transphobia. At this point, it is important to note that trans people "make it clear that while sex, gender, and sexual orientation are interrelated, they are also separate"[3 (p19)]. "Sex commonly refers to whether a person is physically female and/or male"[15 (p24)]. While, "gender identity is a person's innate feeling of being male, female, both genders, neither or in between. It is not a reference to

people's biological sex or their sexual orientation"[50]. Finally, "sexual orientation has to do with desire and arousal. Are you attracted to someone male by sex, male by gender, female by sex, female by gender, or some combination thereof?"[3 (p 19)] Therefore, the trans identity says nothing about sexual orientation. According to Kammerer *et al*[3], "what from an outsider's perspective is homosexuality may be heterosexuality from the point of view of the participants. Many male-to-female [trans individuals] consider themselves to be having heterosexual sex when they have sex with men"[3 (p19)]. Moreover, according to Bauer *et al* [51], sexual orientation is fluid and changeable and may vary over the course of the transition period for those who are transitioning either socially or sexually. A lack of understanding of trans lives and experiences in this respect adds to intolerance in society and makes trans and other non-*normal* individuals vulnerable to discrimination. Because of the lack of understanding, individuals who are trans may experience homophobic attitudes and actions whether or not they are homosexual in their attractions. According to Shelley[17], the person who uses what we recognize as transphobic insults may not be aware that they are transphobic; they only see someone who transgresses some norm and react negatively without fully comprehending what their reactions mean, or how they can be characterized. That is, they may infer homophobia where none exists[17]. So then, all people who transgress this norm, whether lesbian or bisexual, trans or gay are given the same offensive, oppressive treatment.

Whatever the gender identity or expression of trans individuals and despite the diversity of behaviours, characteristics, roles and sexualities of trans individuals, transphobia is a common experience shared by these individuals. Serano[15 (p12)] describes transphobia, as an "irrational fear of, aversion to, or discrimination against people whose gendered identities, appearances, or behaviours deviate from societal norms". While Lombardi [52 (p979)], describes it as "the feeling of unease or even revulsion towards those who express nonnormative expressions of gender identity and expression". Lombardi[52] reports that: approximately 29% of trans persons in the U.S. have experienced discrimination in housing; 30% have reported being fired from their job; 30% have been physically abused; 37% have experienced economic discrimination; 50% have experienced job discrimination; 60% have experienced some sort of harassment or violence; and 80% have experienced verbal harassment[52,53]. Other researchers have also reported on the high levels of institutional and personal discrimination, unemployment, violence, abuse, discrimination in housing, health-care access issues and resultant mental health issues, morbidities, homelessness and poverty faced by trans persons in North America[14,44,52,53,54]. These negative experiences likely arise from the transphobic societal attitude that pervades institutions and individuals lucky and privileged enough to be considered cis/hetero/normal.

Like homophobia, transphobia can also be internalized by the individual leading to a marred self-image. Internalized homophobia, biphobia or transphobia is hypothesized to be a mediator of substance use disorders[55]; mental health disorders[4,46,56], and HIV risk behaviours[4,22,28,37,38,46,57,58]. Hudson and Riketts[59] propose the use of the term "homonegativity" rather than "homophobia" to denote the "anti-gay" and "anti-lesbian" sentimentality of prejudice against homosexual individuals[28 (p97)]. Homophobia may focus too much on the feelings-based fear component of prejudice, thus obscuring the negative experiences faced by non-cis individuals are a part of the "value system" of a heteronormative society[28 (p98)]. While keeping this in mind, both terms may be used throughout this document. Whatever the terms used, internalization of stigmatized traits leads to poor self-regard[22 (p161)], which can lead to negative health outcomes to the extent that it affects individual behaviour. We further discuss homophobia, aka homonegativity, while hypothesizing that its impact is similar to that which might be expected from the experience of transphobia.

Williamson[22 (p101)] summarizes the research on homophobia and HIV, categorizing them into three streams: "HIV prevention and safer sex decision-making processes, coping strategies of seropositive gay men, and whether internalized homophobia has any effect upon viral progression". We are mainly interested in the first area. According to Williamson[22 (p101)] , "a relationship between internalized homophobia and riskier sexual acts seems logical for a number of reasons"; first, "homonegative gay men are likely to be less affiliated with the gay community and may therefore have less access to safer sex information and resources" in this context. Additionally, there exists a correlation between homonegativity and low self-esteem "which may undermine the individual's desire to keep themselves safe" [22 (p101)]. Finally, as suggested by some studies, greater levels of homonegativity might be related to greater substance abuse and alcohol use, behaviours that may impede good decision-making[22,33,34,35,36]. For example, engagement in unprotected receptive anal intercourse was explained as a means of affirming gay identity[60]. While for some, engagement was used as means of escape[57]. Importantly, internalized homophobia has differential effects on gay men, and may more likely impact those with "fragile" sexual identities[22 (p102)].

According to Kimmel and Mahalik[61], the gender socialization model can also be used to explain the health risk behaviours of gay men. It is suggested that men are more likely to engage in health risk behaviours due to pressures experienced during "gender role socialization that direct them away from self-care and encourage health risk behaviors as part of developing a masculine identity"[62,63,64]. Therefore, the lure of the "masculine ideal" may promote greater risk-taking, self-destructive behaviours, and reduced concern for personal health and safety[62]. As a result, Hamilton *et al*[63 (p133)] hypothesized that when gay men experienced minority stress in

the form of internalized homophobia, perceived stigma, or antigay physical attacks, and if they "conformed to traditional masculine gender roles, and perceived that health risk behaviors were normative in other groups of men that they would be more likely to abuse alcohol, use tobacco and illicit drugs, and engage in risky sexual practices". These researchers found that "the relationship between perceived norms and health risk behaviours was stronger for gay men with high minority stress" versus low minority stress[63 (p136)]; i.e. rather than describing minority stress as a predictor of risk behaviours, minority stress acted as a moderator between gay men's perceptions of normative behavior and risk taking behavior[63]. They point out that this finding emphasized the "importance of addressing the complex social context that gay men experience as it relates to health behaviours"[63 (p137)].

Despite society's tendency to conflate sex, gender and attraction, gay men's issues are not trans issues, though some trans persons will face homophobia depending upon with whom they choose to partner. Yet, both groups can be said to occupy marginalized positions in society, and it can be theorized that similar outcomes may arise from trans discrimination and internalized transphobia as from discrimination due to sexual orientation and internalized homophobia. In fact, according to Shelley[17], transphobia is analogous to homophobia. Much of the research that has been done in the area of discrimination against LGBT individuals, has the majority of their participants or subjects coming from the LGB groups; trans individuals have often been overlooked – the" T" has been silent. Researchers who have looked specifically at trans issues have conceptualized their situation thusly: "precipitating factors for transgenders' sexual risks and substance abuse arise from three main sources: 1) social stigmatization and related negative self-image, 2) economic vulnerability and related prostitution and substance abuse, and 3) the need for identity affirmation and the quest for a feminine body [for MTFs]"[3 (p25)]. Also, according to Bith-Melander[44], speaking about trans individuals in San Francisco, said "transgender individuals… make decisions out of the need to survive"; and so "people will choose among the many options that are available to them at the time and weigh between the immediate and long-term consequences. Even if the consequence is life-long and severe (i.e., being infected with HIV), people will choose among the many available options that fulfill their immediate or daily needs"[44 (p210)].

According to Shelley[17], the reaction that others have towards trans people are often complex and not well understood, least of all by the perpetrators. He uses the term "repudiation" in his articulation of the range of reactions directed towards trans people[17]. These reactions are usually hostile and threatening and generally include phobic reactions[17]. According to Shelley[17], trans people identify transphobia as a ubiquitous menacing force with a traumatizing effect on the trans people experiencing it. Shelley[17 (p32)] suggests that transphobia

"ultimately suggests a causal explanation for the subjugation of trans lives", and "that trans people incite by their very existence and presence - fear" in others. Besides fear, there are other reasons that others may reject the legitimacy of trans identity, including loyalty to social and religious ideals or moral convictions; or political ideologies that do not accept the legitimacy of trans lives[17 (p32)]. He goes on further to say reactions to trans people are conscious and unconscious, interpersonal and intrapersonal and includes a range of affective and cognitive elements from sympathy, pity or a colonial mindset, to enmity, hatred and repulsion[17]. Repudiation, according to Shelley[17] therefore, is a multifaceted and dynamic phenomenon that may involve either ambivalence towards trans persons that lead to defensiveness or intense negative responses that promote a more offensive stance. The resulting violence, harassment, or condemnation experienced by trans persons can cause a despair that leads to alcohol or drug abuse or a host of other "compensatory behaviours" [17 (p60)].

1.1.8 The Context of HIV Vulnerability

Ayala and Diaz[2] contextualize the uneven patterning of HIV in society as resulting from racial and economic disparities. These authors claim that interpersonal and institutional experiences of racism and classism do not tell the full story about sexual risk behaviour and HIV vulnerability[2]. Rather they state that "race and class organize social life and shape sexual practice", and "individuals not only experience discrimination but also actively make choices, construct meaning, and shape situations in ways which create enhanced risk for HIV infection"[2 (p61)]. Further, "experiences of social oppression are as much products of everyday, taken-for-granted ways in which people enact their social lives, as they are the products of systems that are out of people's control"[2 (p61)]. These authors then, do not subscribe to behavioural theories of risk that conceptualize the impact of phenomena such as race narrowly as simply events that "passively happen to individuals, resulting in personal and psychological deficits that undermine HIV preventive behaviour"[2 (p60)]. Themes that emerged from the work of Ayala and Diaz[2] included racism against their Latino participants by White gay men in the bedroom, and their objectification by the same; and the idea that gayness as solely belonging to White men's identity, i.e. if you are gay you must be White. Participants also noted that there was inequitable access to HIV/AIDS preventative resources. Furthermore, there existed a racial and class-based ordering of the gay world that was said to organize the sexual attractions, opportunities, perceptions and expectations of the men in that world[2]. Participants often relied on these perceptions when making decisions about sex, which is a dangerous approach to decision-making as it became apparent that HIV was considered a "white man's disease" by one of the participants[2 (p69)]. There was also the expectation that "Latino men only want anal sex" which may impact on how men pursuing sexual encounters with these men may behave in these encounters[2 (p68)]. The work of Ayala

and Diaz[2] also connected marginalized, minority identity with poverty, hopelessness and poor sexual decision-making. According to one of their participants, "there's the psychological oppression that comes, that you're not worthy of life because you have been taught all your life, not only in the family structure, but society as a whole, that you're not worthy. So the slip on the condom could be a very normal slip because subconsciously you may be saying to yourself that I'm not really worthy of life. What the hell, let go"; which "contributes to a sloppy sex life"[2 (p73)]. Ayala and Diaz (2001) also showed how sex work becomes more than a way of escaping a life of poverty for young Latino males, but also a way of entering into a new world, a gay world, which was seen as the more attractive world of middle-class Whiteness[2 (p73,74)].

Ayala and Diaz[2] do a good job of exploring the contextual factors that create contemporary risk for Latino gay men. This conceptualization echoes Kammerer's[3 (p23)] theory that "transgendered individuals are embedded in society and must be seen not as isolated actors but as people who interact in families, schools, and other social contexts". Both report on the importance of social life, individual construction of meaning and value systems, as well as norms, and social location as impacting upon risk. So then, society in tandem with the individual creates the risk structures in which each person resides; macro-, meso- and micro-level social factors together determine health[12]. The macro-level structures include ownership and distribution of land, capital and income; economic systems; legal and welfare structures; and the existence of social justice and equity[12]. Meso-level structures, situated within the macro-level structures, include religious institutions, firms, clubs, and the family[12]. Also at the meso-level are psychosocial formations including social networks, supports, work control, balance of effort and reward, security, autonomy, home control, work-family conflict and similar interactions[12]. At the micro-level, individual psychological factors such as those elucidated in the discussion of minority stress, and those that result from the experience of racism and transphobia, as well as more positive interactions, impact biology and behaviour, ultimately impacting upon health – Figure 3[12].

To summarize then, "oppression, whether based on gender, race, or class, takes place on multiple levels including the institutional (macro), intergroup (meso), and personal (micro) levels of social interaction. At all three levels structures and human agency are interactive, that is structures constrain the choices and actions of individuals while individual choice and action are at the same time determinant of structures"[65 (p5)]. Using this model one can trace a hypothetical pathway through which racism and transphobia may impact upon HIV vulnerability. Predictors of HIV vulnerability cross multiple levels of social structure and vary from poverty to alcohol abuse. At the most proximal position on the pathway to infection, however, lie sexual transmission via semen or vaginal fluid, blood to blood transmission, including through intravenous drug use or blood

transfusion, and mother-to-child transmission. As such, researchers are often interested in predictors of unsafe sex, and injection drug use, and other such individual-level decisions as points of intervention. Individual level predictors of sexual risk-taking include low education, low social support, and non-consensual sex experienced as a youth or adult, as young gay and bisexual men reporting these factors were significantly more likely to have recently had unprotected anal sex with casual partners[66]. Ramirez-Valles[67 (p1041)] found that "age, education, and use of club and other drugs were associated with unprotected anal intercourse". Minority stress was also identified as a predictor of sexual risk behaviour[4,22,37,56], as was transphobia interacting with age among trans women of colour aged 18-25[58]. Nemoto *et al*'s[68] qualitative study on Asian and Pacific Islander men who had sex with men found that they experienced dual stigma of homophobia and racism in their communities. According to the study, the men experienced alienation that prompted a need for closeness manifesting in a willingness to engage in risky sex in order to satisfy emotional needs[68]. Similarly, trans persons of colour inhabit a psychosocial environment that likely includes both transphobia and racism and may also be dually stigmatized. These individuals then are likely to be vulnerable to HIV through similar psychosocial processes, in addition to the structural factors associated with increased HIV risk among marginalized individuals in North America.

1.1.9 Proximal Sex-Related Covariates of HIV-Related Sexual Risk

Summarizing the literature already examined, we see that Meyer[4] identified internalized homophobia as an important psychosocial mediator of HIV-related risk behaviour. Bockting *et al*[69] expand on some of the many other psychosocial factors that may increase a stigmatized person's vulnerability to HIV, including sexual identity conflict, shame and isolation, secrecy, search for affirmation, and compulsive sexual behaviour. Ayala and Diaz[2] connected social marginalization due to racism and homophobia with a sense of hopelessness and poor sexual decision-making, e.g., low condom use for some Latino gay men; recall one participant's comments "there's the psychological oppression that comes, that you're not worthy of life because you have been taught all your life, not only in the family structure, but society as a whole, that you're not worthy. So the slip on the condom could be a very normal slip because subconsciously you may be saying to yourself that I'm not really worthy of life. What the hell, let go"[2 (p73)]. According to Brooks[9 (p147)], due to interactions with those in the majority, other "expected minority behaviours might include an apologetic, self-disparaging demeanor; and overreaction to social overtures such as displayed by an over eagerness to please or placate; and a total denial or suppression of one's sexual self". Brooks' description may imply that minority stress can alternately increase sexual risk behaviour on the one hand, or moderate it on the other, due to the tension between being eager to please and yet denying or suppressing one's sexual self; the latter may be expected to decrease sex risk if individuals avoid

sexual situations altogether, though this behaviour may be unhealthy in other ways. Kammerer[3] points to the relationship between trans identity and the need for identity affirmation, while Nemoto[68] reports on the need for closeness that often manifests itself in a willingness to engage in risky sex in order to satisfy emotional needs. Additionally, according to Williamson[28] homonegativity, i.e. homophobia, is associated with low self-esteem, which he claimed could undermine the individual's motivation to engage in sex-related self-protective behaviours. These outcomes of social oppression outlined above may all be mediators of sexual risk taking behaviour among trans Ontarians.

In general, the researchers above maintain that minority stress arising from minority status can greatly impact upon sex behaviours thus increasing individual vulnerability to HIV[2,3,4,9,28,68,69]. Although the Trans PULSE survey did not collect information on all these potential covariates of risk, data was gathered for several potentially important proximal sex-related covariates of sexual risk including condom/barrier efficacy, sexual anxiety, sexual satisfaction, sexual fear and trans-related body image issues, all of which may be impacted upon by racism and transphobia and then themselves have an impact upon sexual risk behaviour as we will describe further below.

1.2 Thesis Objectives and Framework

1.2.1 Thesis Objectives

This project's primary purpose was to fully explore the unique social location of the different subpopulations of trans Ontarians and the potential HIV-related impact. This report therefore answers several important questions about the prevalence of racism and transphobia among trans Ontarians and about the psychosocial and HIV-related behaviour that may result. Particularly,

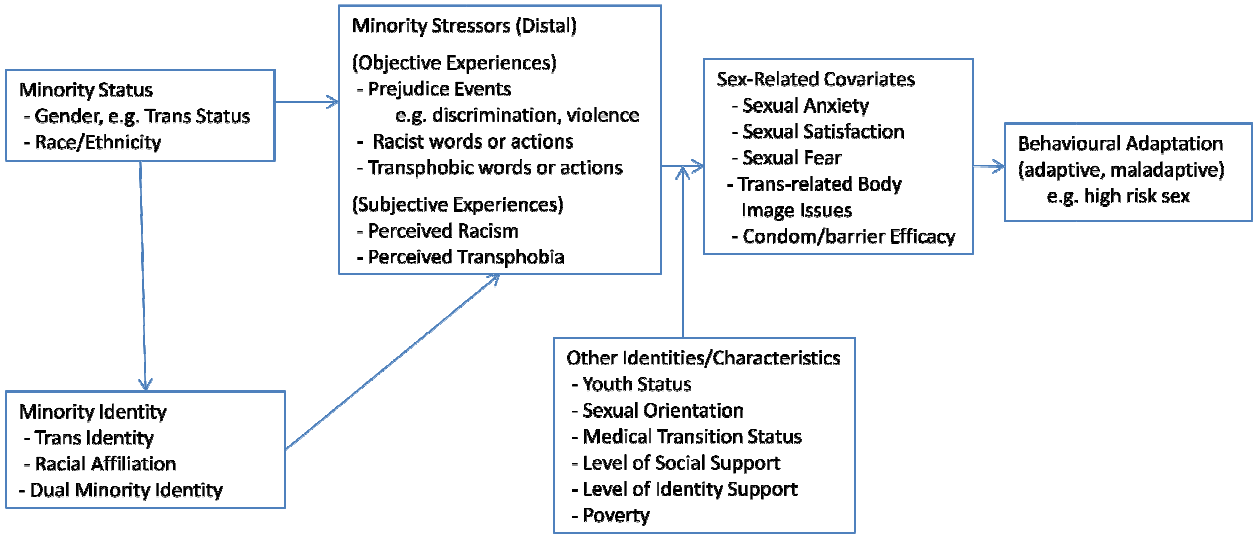
I. We explored the socio-demographic factors related to self-reports of racism and transphobia in Ontario, thus determining the factors associated with self-reported racism and transphobia among trans Ontarians, or alternatively determining who among trans Ontarians report more (or less) racism and transphobia,

II. We determined the relationship between self-reported racism and transphobia and past-year HIV-related sexual risk taking behaviour among trans persons in Ontario, specifically, assessing whether or not self-reported racism and transphobia interacted to impact upon past-year HIV-related sexual risk taking behaviour. And finally,

III. We produced a model of HIV-related sexual risk behaviour to explore the potential covariates and moderators of this behaviour among trans Ontarians. Sex-related covariates examined included condom/barrier efficacy, sexual anxiety, sexual satisfaction, sexual fear, and trans-related body-image issues.

1.2.2 Theoretical Framework

Figure 1: Theoretical Impact of Self-Reported Racism and Transphobia on Health Behaviour



This figure based on Meyer's[4] model of minority stress depicts the process through which self-reported racism and transphobia may impact upon HIV-related health behaviour through varied psychosocial processes, and will be used to guide analyses. The model posits that minority status determines minority identity and experiences of discrimination, prejudice or oppression, which then impacts upon the sexual attitudes, resources and experiences of trans persons ultimately impacting upon their HIV-related sexual risk behaviour, depending upon other characteristics of the individual in question. Of the possible proximal covariates of HIV vulnerability, the Trans PULSE survey collected information about condom/barrier efficacy, sexual anxiety, sexual satisfaction, sexual fear and trans-related body image issues. These will be examined for their relationship to the predicted variable, past-year HIV-related sexual risk behaviour. Important potential moderators that will be explored include youth status, sexual orientation, medical transition status, level of social support, level of identity support, and poverty or low-income status. However, other variables, e.g. marital status (not in figure), will also play a role in sexual behaviour and so will be included in analyses where specified.

2. Methods

2.1 Overview

2.1.1 The History of the Trans PULSE Project

Data for the analysis came from the Trans PULSE project. The Trans PULSE Project is a mixed-methods, community-based research (CBR) project that has as its primary objective, the improvement of the quality of life of trans persons in Ontario, and across Canada. A diverse composition of trans community leaders, community organizations – Rainbow Health Ontario, Ontario HIV Treatment Network, The 519 Church St. Community Centre – and academic partners – Wilfrid Laurier University and The University of Western Ontario – made up the Trans PULSE research team. This Ontario-wide research enterprise has thus far been rolled out in two research phases. Phase I involved a i) a review of the literature, ii) a survey that was completed by service providers, as well as, iii) focus groups, or community soundings, that engaged members of the trans community and service providers. These were done in order to better understand the health and social service issues that were of importance to trans communities. Phase II involved the distribution of a survey that was developed in response to issues uncovered during Phase I. The general aim of the Trans PULSE research project is the measurement of the levels of social exclusion experienced by trans persons and the elaboration of the impact on physical and mental health. The data gathered will serve to increase knowledge as it relates to trans exclusion in Canadian society generally, and in health and social care in particular, and the incumbent health impact of this social exclusion. Results are expected to influence the development or improvement of trans-appropriate health and social programs, effect policy change, and contribute to the empowerment of trans people across Canada as well.

2.1.2 Community Based Research

Community-based research (CBR) can be described as that type of research which calls for the active engagement of the members of the target community in the stages of the research process from question development to knowledge exchange. This type of engagement goes beyond simple consultation, and is rather the formulation of an intimate relationship between community members and the research, such that, the community members become collaborators and partners in the research rather than simply its subjects. In the case of the Trans PULSE project, the project was initiated by trans community members in 2005 with the

assistance from the Sherbourne Health Centre and funding from The Wellesley Institute and the Ontario HIV Treatment Network. In addition, question development and participant recruitment was very collaborative involving a mixed team of trans community members, non-trans allies, and community organizations, including Rainbow Health Ontario, Ontario HIV Treatment Network, The 519 Church St. Community Centre and academic partners from the Wilfrid Laurier and The University of Western Ontario.

Increasing the capacity for CBR within the trans community was a primary objective of the Trans PULSE project from the outset. As such, the leadership has taken concrete steps to facilitate the development of partnerships that will enable trans community members to undertake future research, identify research questions important to trans Ontarians through dialogue with said communities, and develop other large research projects helpful to trans communities. The majority of the trans community members that make-up the Trans PULSE leadership have been involved in knowledge translation and exchange with the academic and non-academic communities, contributing to presentations at research conferences such as those hosted by the Ontario HIV Treatment Network, the Canadian Association of HIV Research and Rainbow Health Ontario. Trans pulse team members have also been invited to consult with various civil clubs seeking information about trans communities in Ontario.

The Trans PULSE project has a trans literature database, and a website that has been used extensively in knowledge transfer and exchange. Additionally, trans community members took the initiative to help develop and launch a promotional video during the survey recruitment process. The survey questions were shaped in part by insights from trans members of the Trans PULSE team, the community engagement team, and by the community soundings that sought the experiential knowledge of trans community members who were not on the Trans PULSE team. Additionally, a sub-committee of Trans PULSE team members that included trans community members, guided the development of this particular analysis and aided in the interpretation of the data to further ensure that investigations remained community-relevant and that results were framed appropriately for use in the improvement of trans lives. These community mentors gave advice and guidance that was indispensible to the data analysis stages of this study.

As in the case of the Trans PULSE project, the relationship between the community and the research can be facilitated by academic researchers, who are also likely to add to the enterprise a level of professionalism and an attendance to process that improves the soundness and reliability of the research. It is the community members however, due to their lived experiences that enhance the applicability and relevance of the research. The CBR

nature of the project is also seen in the diversity of skill sets, expertise, and level of experience brought by each member of the team. This collaboration between community members and allies and between academic and non-academic partners has great potential for contributing to social justice, social change and ultimately to the betterment of trans communities, which are the primary goals of community-based research[70].

2.2 The Trans PULSE Data Set

2.2.1 Data Collection Overview

After launching in May 2009, 433 surveys were completed by trans persons who were at least 16 years old and residing in the province of Ontario, Canada. The surveys were made available online, via paper-copy and via telephone with assistance from a language interpreter. Data were collected through the use of a chain-referral sampling method known as Respondent Driven Sampling (RDS)[71]. Data collection progressed over one year, ending in May 2010.

2.2.2 Recruitment

Respondent driven sampling (RDS) was employed to the task of recruiting trans Ontarians to the Trans PULSE study because of the absence of a sampling frame for these populations. Having no sampling frame meant that there was no list or directory that identified and enumerated the members of the group; therefore no random sample could be drawn[71,72,73,74,75,76,77]. The incentive system and the use of social networks for recruitment purposes meant that RDS had a greater potential for reaching the "hidden" population sought by the research team[78].

Overview of the RDS Procedure

RDS is a type of chain referral, or snowballing method that samples individuals through their personal networks[71,72,73]. Other non-random, non-probability sampling methods are subject to selection bias because the probability of selection into the sample is unknown[76]. This is overcome in RDS through the collection of information about the size of each participant's peer network, which is then used to calculate the probability of selection within the network[76]. Using known network properties help to account for clustering effects[76]. In RDS,

a few members of the target population, called "seeds" are recruited by members of the research team[78]. The seeds (representing the 0th recruitment wave) then initiate a chain-referral process by recruiting a set number of their peers (wave 1), who then recruit a set number of their peers (wave 2), and so on[78]. The seed refers their peer into the study by providing them with a coupon that has a unique serial number[78]. The potential recruit then chooses to participate or not. If an eligible peer enrolls in the study, his recruiter is reimbursed for their efforts[78]. Ideally, chain referral then continues for several waves of recruitment resulting in long recruitment chains[76]. Generally, chain referral is stopped when the target sample size is attained[79], or when the sample reaches equilibrium with respect to the variables being measured[78]. This equilibrium is achieved when the sample distribution of key variables remains stable within 2% of the equilibrium distribution, even as more individuals are added to the sample[76].

Trans PULSE and RDS

Recruitment for Trans PULSE began in 2009 with 16 seeds, representing the 0th wave of recruitment. These initial participants were members of Trans PULSE's Community Engagement Team, who like other participants, met the eligibility requirements of the study, were well-connected in trans communities, were geographically dispersed, and were diverse with regard to income, age, ethnicity, and immigration status. These well-connected individuals, who were knowledgeable of the trans communities, and who had interest in the goals of the study, were chosen in order to ensure adequate networking and effective penetration of the target communities[76]. These seeds were given a limited number of coupons, in order to minimize the influence of the initial seeds on the final composition of the sample, thus reducing the potential for producing a sample biased by differential recruitment[73,77,78]. Essentially, limiting the number of coupons, "allow[ed] for an increase in the social distance between seeds, initial recruits, and later recruits"[80 (p65)]. After, recruitment had been allowed to reach four or five waves, the Trans PULSE Steering Committee found it necessary to re-seed, in response to a slowing down of recruitment, and because some seeds had not sprouted (specifically, 2 seeds had not recruited others into the study). There were, thus, 38 seeds in total at the end of the project's recruitment period in 2010. These recruited 433 people into the study. The entire sample, including the seeds, was used in this study.

Homophily

Homophily is the tendency for individuals to affiliate with others who are like themselves in terms of education, income, ethnicity, and general interests[81]. It is the "preference for connections to one's own group" and varies

between -1 (completely heterophilous) and +1 (completely homophilous)[82 (p32)]. According to Erickson[83] this bias is introduced during seed selection and can be further compounded with each additional recruitment wave, with the final sample composition simply reflecting the characteristics of the initial seeds. However, according to Heckathorn[72], with each successive wave of recruitment, the sample attains and maintains a stable composition, or equilibrium, that does not change even as more members enter into the sample, suggesting that the final composition would be the same regardless of the choice of initial seeds[72]. Bias, then, becomes progressively weaker with each wave until it is negligible[73]. When participants recruit three peers, as was done in the Trans PULSE recruitment method, this equilibrium can be reached within six recruitment waves[73]. The Trans PULSE sample was allowed to progress beyond 6 waves, with the longest chain reaching 10 waves of recruitment, and as was already discussed, the diverse seed choice further decreased the likelihood of obtaining a homophilous sample. Furthermore, RDSAT, our analysis tool, allows for control of homophily through the application of appropriate weighting[80]. Nevertheless, where homophily appears excessive, interpretations are made with caution. Homophily poses a threat to accuracy of analysis, because statistical power is much reduced when homophily is high. This is because if a sample is homophilous, then there is little difference between the status markers of participants in the sample, and, it therefore becomes difficult to detect differences between them.

2.3 Survey Development

2.3.1 The Trans PULSE Survey

With the input of trans community members, the Trans PULSE team of investigators identified several areas of importance to the health and prosperity of trans Ontarians. The Trans PULSE survey was developed to assess the status of trans Ontarians in terms of their access to, and use of health and emergency care, family medicine, general mental health care, and HIV-related care. The survey asked trans Ontarians questions about HIV and other sexual transmitted infections, access to and use of gender-related hormones, and about surgeries and body modification procedures undertaken or sought after. The survey also attempted to determine the socioeconomic status of trans Ontarians as represented by employment, income, nutrition, and housing status. There were also questions geared to determining the life satisfaction, life experiences, parenting, sexual activity and health, mental health, emotional well-being, substance use, general health status and concerns of the trans participants.

2.4 Data Cleaning

Data cleaning was done to check for and to recode out-of-range responses and invalid values in the data. This was done by all individuals using the Trans PULSE data for analysis, but mainly by the Principal Investigator of the study, Dr. Greta Bauer. Data used in this thesis came from a central cleaning file managed by Dr. Greta Bauer, however, because of the great number of variables used in the survey, independent checking and cleaning was still recommended for anyone using the data. In general, cleaning involved ensuring consistency and accuracy of participant responses. For instance, because all unchecked boxes were automatically marked as "2's" for online surveys, check-all-that apply questions were checked to ensure that truly missing variables were indicated with a period, and only questions that were truly "no's" were indicated by a "2". If an individual checked one of a number of possible responses, but left others in the check-all section blank, we assumed that the others were meant to be "no's", and these were left coded as such, however, if the item was meant to be a "missing", then it was coded as a period. For example, if the respondent skipped the entire question, then all response options were meant to be "missings", and were recoded as such if necessary. We also checked for inconsistencies in participant responses, ensuring, for example, that skip patterns were followed accurately, and in cases in which they weren't, the data were cleaned to provide the most accurate information possible. For example, in the HIV-related sexual risk behaviour section, if participants indicated that they had never had sex in one question, then gave the age they were when they first had sex in the next question, or reported the types of sex that they had had, then to preserve information, the analyst would assume that the first piece of information was inaccurate and would then change the participant response to represent having indeed had sex. If all but one response indicated that indeed the participant had never had sex then the appropriate steps would be taken to mark as missing questions that should have not been answered by the participant. These changes were made only after careful consideration and were done so as to preserve as much participant information as possible. In another example, individuals indicated that their ethno-racial background was Aboriginal in one question (*Which of the following reflect your ethno-racial background?*), but indicated that they were neither First Nations, nor Métis, nor Inuit in another question (*Are you…?*). In this case, information from another question (*How do you identify your own ethno-racial background?*) was central to correctly identifying the ethnicity of these respondents, as this question was given priority in determining ethnicity for these cases. For the gender spectrum variable, some participants rejected the response options given and chose to write in their gender identity as they saw it. These responses did not always easily fit into one of the categories we had to work with, and in other cases were actually inappropriate descriptions of gender. For those

that could be inferred, the most likely response category was chosen for recoding, for those that could not be accurately inferred, the variable was marked as missing.

2.5 Measures

My contribution to this study began post survey development and collection. Variables chosen from the Trans PULSE collection to be used in this particular study included such socio-demographic variables as age, youth status, sexual orientation, ethno-racial background, newcomer status, immigration status, frequency read as a person of colour, frequency read as trans, medical transition status, social transition status, legal marital status, education, high school completion status, employment, personal income, low income status, social support, and identity support. The main predictor variables were racism and transphobia, and the outcome variable was past-year HIV-related sexual risk behaviour. Proximal psychosocial covariates assessed included condom/barrier efficacy, sexual anxiety, sexual satisfaction, sexual fear and trans-related body image issues. These variables were recoded prior to analysis for ease of application and to maximize effective sample sizes and are fully described below.

2.5.1 Socio-demographic Variables

Age

The age variable used in the survey was a write-in variable. It ranged from a minimum of 16 to a maximum of 77 years. The variable was recoded so that it could take on a zero value, i.e. 16 was subtracted from each value. This was done so that the multivariable logistic regressions which included this variable could be more logically interpreted. For example, when included in an interaction term, the lower order age term becomes effect of being 16 years old, rather than effect of being zero years old, which would have been less useful for our purposes. This variable was used in its continuous form for logistic regressions. It was included for analysis because social experiences are cumulative and it is likely that individuals at older ages have had more opportunities to experience both racism and transphobia. Older individuals may have also had more sexual encounters perhaps increasing the odds of risk.

Youth Status

Age was also used in dichotomized form: youth aged 16 – 24 and adults aged 25 or older, according to the definition of youth put forth by the United Nations[84]. Youth status may act as a moderator of racism and transphobia in its impact on sexual risk behaviour. Evidence for this is given by Sugano *et al*[58], who reported that an interaction between age and experiencing discrimination was observed, so that among transgendered women 18–25 years old, those reporting higher levels of exposure to transphobia had a 3.2 times higher risk for engaging in unprotected anal intercourse compared to those reporting lower levels of transphobia. We hypothesize that an interaction may similarly exist for racism, such that the experience of racism impacts individuals differently depending upon their youth status.

Ethno-racial Background

Participants were put into three categories: non-Aboriginal White, Aboriginal, or non-Aboriginal person of colour (POC) depending on their self-reported ethno-racial background. Participants were asked *which of the following represent your ethno-racial background?* Responses included, *Aboriginal, Latin American, East Asian, Indo Caribbean, South Asian, Middle Eastern, South East Asian, White Canadian or White American, White European, Black Canadian or African American, Black African,* and *Other*, for which participants could specify their ethno-racial background. Participants were allowed to choose more than one category, however, were put into only one of three possible categories for our analysis.

Individuals were characterized as non-Aboriginal White if they indicated being White Canadian, White American, or White European. Individuals were characterized as Aboriginal if they indicated as much; this included people who were First Nations, Métis or Inuit. Individuals were categorized as being a non-Aboriginal person of colour if they indicated that they were neither White nor Aboriginal. This group included Latin Americans, East Asians, South Asians, Middle Eastern individuals, South East Asians, Black Canadians, African Americans, and Black Africans. For individuals of mixed ethnicity, preference was often given to Aboriginal status over the other two, and preference was often given to non-Aboriginal status as a person of colour over White ethnicity. For example, if a participant classified himself as White and Aboriginal and South Asian, he would be coded as Aboriginal, depending upon his response to other questions, including *are you First Nations, Inuit, or Métis?* A person who said yes, to this question was coded as Aboriginal regardless of other ethnicities. Persons who were not Aboriginal, and who indicated both White and POC status, were categorized on a person-by-person basis

using information about their ethno-racial backgrounds, self-declared ethnicity, and how they were perceived by others, e.g. a non-Aboriginal person of mixed ethnicity might be categorized as non-Aboriginal Person of Color if he or she indicated being perceived as a person of colour by others. Racism is expected to vary by ethnicity.

Gender Spectrum

Participants were put into one of two categories describing either a female to male (FTM) or a male to female (MTF) trajectory depending upon their responses to two questions: "*what was your assigned sex at birth*?" and "*what describes your present gender identity"*? For example, if participants indicated being assigned to the "male" sex at birth and indicated that their current gender identity was "girl or woman", then the participant was categorized as being on the MTF spectrum. Participants could also simply choose to indicate a FTM or MTF gender identity. Where inconsistencies were found, responses to other questions were used to determine an individual's gender spectrum, e.g. "*are you currently living in your felt gender*?", and "*which of the following applies to your current situation regarding hormones and/or surgery*?" with response options including, "*I have medically transitioned*", etc. It is important to note, that not all participants in the Trans PULSE survey have completed or begun either a physical or social transition, rather for individuals to be considered trans, it was enough that their felt gender did not match the physical sex with which they were born. Both racism and transphobia are expected to vary by gender spectrum.

Frequency Read as a Person of Colour

One question assessed how participants might be viewed by others in terms of their colour: "*how often do people you encounter perceive you as a person of colour*?" This was an ordinal level variable with 7 responses ranging from "never" to "always". The variable was transformed into a 4-level variable that included being "often or frequently perceived as a person of colour"; "perceived as a person of colour occasionally or about half the time"; "rarely or very rarely perceived as a person of colour"; and "never perceived as a person of colour". This degree of racial passing is related to visibility. Greater visibility as a racialized minority individual may increase the chances of experiencing racism.

Frequency Read as Trans

One question assessed how participants might be viewed by others in terms of their apparent trans status. Specifically, participants were asked *how often do people you encounter know you are trans without being told so?* This was an ordinal level variable with 7 responses ranging from "never" to "always". It was transformed into a 4-level variable and included being "often or frequently perceived as trans"; "perceived as trans occasionally or about half the time"; "rarely or very rarely perceived as trans"; and "never perceived as trans". The degree of non-trans passing is related to visibility. It is likely that greater visibility as a trans individual may increase the chances of experiencing transphobia.

Medical Transition Status

A question about individuals' situation in regards to hormones and surgery was used to ascertain participant medical transition status. Individuals indicated that they had either *medically transitioned, were in the process of medically transitioning, were planning to transition but had not begun, were not planning to medically transition, the concept of "transitioning" did not apply to them, or that they were not sure if they were going to medically transition*. The recoded variable had three levels including "completely transitioned medically", "in the process of medically transitioning", and "not begun or planning to medically transition". It should be noted that medical transition status does not provide an objective measure of position along a hypothetical gender trajectory. It is rather a subjective measure and differs person to person. An individual who is "in the process" of medically transitioning may in fact have had more changes made to their person than someone who has "completed" medical transition. Nevertheless, this variable may have an impact upon level of transphobia experienced or HIV-related sex risk behaviour, potentially constraining this behaviour. According to Lawrence[85], attraction may change in the 12 months after sex reassignment surgery (SRS), so too may participation in sex, with individuals reporting greater partner numbers before SRS. On the other hand, improved sexual function and satisfaction is reported by trans individuals who had received hormonal therapy as part of sex reassignment[86].

Social Transition Status

Since gender identity is not always congruent with gender expression, one question assessed whether or not participants were living in their felt gender – i.e. the gender that fit better with the way they felt internally rather than with the external anatomy or biology they were born with. The question was: *are you currently living in your felt gender?* This variable had three levels including "living full-time in felt gender", "living part-time in felt gender", and "not living in felt gender".

Sexual Orientation Identity

Participants reported their sexual orientation identity. Response options included*, bisexual, gay, lesbian, asexual, pansexual, queer, straight or heterosexual, two-spirit, unsure or questioning,* and *other*. For this last category, participants had the opportunity to write their unique sexual orientation identity as they defined it. These write-ins were assessed, and participants were placed in one of the other categories based on what they wrote. Those write-ins that did not represent orientation identity, e.g. "transgender" were deleted. Sexual orientation identities were grouped into a 6-category variable for our descriptive analysis. Specifically, participants were categorized as being either, "bisexual or pansexual", "gay or lesbian", "straight", "asexual", "other sexual minority", or "unsure" sexual orientation identity. Due to small cell sizes, the "asexual", "other sexual minority" and "unsure" categories were collapsed before the variable was included in logistic regression analyses.

Immigration Status

Participants' status in Canada was determined by one question. The variable originally had response options that included *Canadian citizen, permanent resident, refugee or refugee claimant, work visa, visitor visa, student visa, undocumented, or without papers,* and *don't know*. These were recoded so that each participant fell into one of only five categories for more easy application in analysis, including, "Canadian citizen", "Permanent Resident", "refugee or refugee claimant", "in Canada on a work, visitor or student visa", or "undocumented, or without papers". The great majority of the participants were Canadian citizens and there were neither refugees nor any undocumented persons, so this variable ultimately had only three categories that could be used for comparison, including, "Canadian citizen", "Permanent Resident", and "in Canada on a work, visitor or student visa".

Newcomer Status

Participants were asked *how long have you been living in Canada?* The answer to this question was given in years and months and was used to put participants into one of two categories, either "living in Canada for five years or more", or "living in Canada for less than five years" according to a popular definition of newcomer[87].

Marital Status

Participants were asked what *is your legal status right now?* Responses included *never married, separated, divorced, widowed, living common law,* and *married*. The recoded variable used for descriptive statistics included 4 levels. These were "never married", "separated, divorced, or widowed", "living common-law" and "married". For logistic regression analyses the latter two categories were collapsed to increase cell sizes.

Education

One question assessed participants' highest level of education received. Originally having 8 response options, including *did not graduate from high school*, *high school graduate*, *some college or trade school*, *college or trade school graduate*, *some university*, *university – bachelor's degree*, *university – graduate or professional school*, and *I don't know*, this variable was recoded into a 4-level variable including "high school not completed"; high school graduate"; "some postsecondary"; and "postsecondary graduate".

High School Status

Education was also dichotomized in order to compare the impact of non-completion versus graduation from high school.

Employment

One question assessed participants' current employment. The variable initially had 13 response options, including *employed in a permanent full-time position, employed in a permanent part-time position, employed on contract full-time, employed on contract part-time, self-employed full-time, self-employed part-time, on leave*

from work, not employed (not a student, not retired, not disabled), student, retired, receiving disability (ODSP), receiving employment insurance, and *receiving general social assistance*. Participants could opt to select more than one response for this question. However, for our analysis, the variable was recoded into a 6-level variable for which each participant occupied only one category, including "unemployed (not a student, not retired, not disabled)"; "employed part-time"; "self-employed part-time"; "employed full-time"; "self-employed full-time"; and "other (student, retiree, and disabled)". The decision was made to separate self-employment and employed by other, because anecdotal evidence suggests that individuals may indicate self-employment where unemployed may be a better description of their situation. Additionally, it may be that discrimination (real or perceived) leads to a preference for self-employment, or may even necessitate self-employment, where discrimination limits more traditional employment options. Nevertheless, a 4-level form of the variable with part-time self-employment collapsed into the part-time employment category and full-time self-employment collapsed into the full-time employment category was also used in cases where cell sizes proved to be a barrier to accurate analysis.

Personal Income

Participants were asked w*hat is your best estimate of your total personal income, before taxes and other deductions, from all sources in the past 12 months?* The income variable that initially had ten levels ranging from *less than $5000* to *$100,000 or more* was recoded into a 6–level variable including "less than $5,000", "$5,000 to less than $15,000:, "$15,000 to less than $30,000", "$30,000 to less than $50,000", "$50,000 to less than $80,000", and "$80,000 or more" to allow greater manageability meanwhile enabling us to see the variability of personal incomes.

Poverty

Poverty is often cited as a predictor of a variety of health outcomes, given that the pattern or distribution of health and disease often maps itself onto the pattern and distribution of wealth[2,44,46]. Therefore, a proxy for poverty was included in all regression models predicting a health outcome. The poverty variable was a transformation of household income, a range variable. The household income question was *What is your best estimate of the total income, before taxes and deductions, of all household members from all sources in the past 12 months?* It had ten response levels ranging from "less than $5000" to "$100,000 or more". In order to produce a poverty variable the mid-value of each household range was used, e.g. for the response "$15,000 to

less than $30,000", the mid-value "22,500" was used. This value was compared to a cut-off that allowed the respondent to be categorized either as living below the low-income cut-off (in poverty), or above it (not in poverty), based on Canada's low-income cut-off (LICO) as provided by Citizenship and Immigration Canada[88]. Canada's 2008 before tax LICO was $42,378 for a household size of 4 (it was $37,164 after taxes) this was converted for other household sizes, by dividing the 2008 LICO value by 2 (the square root of the household size of four persons) and then multiplying by the square root of the desired household size. This represented the cut-off value for each respondent. Participants with household incomes of less than their unique cut-off amount were designated as living in low income conditions, while participants with household incomes above their unique cut-off were designated as *not* living in low-income conditions.

Social Support

The social support scale consisted of 19 items that was originally developed for patients in the Medical Outcomes Study (MOS), a study of patients with chronic conditions[89]. The social support scale was actually a composite of four functional support scales, including emotional and informational, tangible, affectionate, and positive social interaction. According to Sherbourne and Stewart[89 (p705)], "these support measures are distinct from structural measures of social support and from related health measures [and] are reliable (all Alphas > 0.91), and are fairly stable over time". The items also showed high convergent and discriminant validity[89]. Participants were asked *how often is each of the following kinds of support available to you if you need it?* The items were:

1. someone available to help if you were confined to bed
2. someone you can count on to listen when need to talk
3. someone to give you advice about a crisis
4. someone to take you to doctor if needed
5. someone who shows you love and affection
6. someone to have a good time with
7. someone to give you information in order to help understand a situation
8. someone to confide in or talk to about problems
9. someone who hugs you
10. someone to get together for relaxation
11. someone to prepare your meals if you unable to do it
12. someone whose advice you really want

13. someone to do things with to help get your mind off things
14. someone to help with daily chores if you were sick
15. someone to share your most private worries and fears
16. someone to turn to for suggestions about how to deal with a personal problem
17. someone to do something enjoyable with
18. someone who understands your problems
19. someone to love you and make you feel wanted

Response options were on a 5-point Likert scale ranging from “none of the time” to “all of the time”. Response options were added with the resulting amount divided by the number of items answered to produce a social support score for each participant. Participants had to have answered at least 80% of the items (i.e. 16 or more items) to receive a score on the social support scale. For this scaled variable higher scores represented greater levels of social support available to the participant. The continuous variable was then split into three categories for descriptive statistics, bivariable analyses, and for use as a moderator. These categories mimicked the response options for each item in the scale, i.e. also ranging from none of the time to all of the time, however, the first three categories were collapsed to provide better cell sizes, ultimately, participants were coded as having support some of the time or less for average scores less than or equal to 2, a little more than some to most of the time for average scores greater than 2 to up to 3, and a little more than most to all of the time for average scores more than 3.

Identity Support

The identity support measure was developed for use in the Trans PULSE study. Participants were asked to assess the extent to which their friends, families and peers supported their (trans)gender identity. In all, participant’s assessed the extent of support they received from 16 possible sources. Question responses ranged from *not at all supportive* to *very supportive*. This score was then averaged by the number of items answered to produce an average identity support score for each participant. The categorized form originally followed the item response options: those with average scores less than or up to 1 were categorized as having very little to no support, those with scores between 1 and 2 were categorized as having a little to some support, those with scores between 2 and 3 were categorized as having some to much support, and those with scores greater than 3 had very much identity support. However, for the sake of cell sizes, this variable was ultimately dichotomized. The

first three categories were collapsed representing those with some identity support or less, which was contrasted with those with more identity support.

2.5.2 Main Predictor Variables

Self-Reported Racism

Ten items were used to assess the experience of racism during childhood and as an adult. This scale asked:

1. As you were growing up, how often were you made fun of or called names because of your race or ethnicity?
2. As you were growing up, how often were you hit or beaten up because of your race or ethnicity?
3. As an adult, how often were you made fun of or called names because of your race or ethnicity?
4. How often were you treated rudely or unfairly because of your race or ethnicity?
5. How often have you experienced some form of police harassment because of your race or ethnicity?
6. How often have you been turned down for a job because of your race or ethnicity?
7. How often have you been uncomfortable in trans spaces because of your race or ethnicity?
8. How often have you had difficulty finding lovers because of your race or ethnicity?
9. How often have you been objectified sexually because of your race or ethnicity?
10. In sexual relationships, how often do you find that partners pay more attention to your race or ethnicity than, to who you are as a person?

These measured both objective and subjective experiences of racism. Three of these items focused on experiences of verbal or physical abuse (questions # 1, 2, 3). Three items focused on experiences of events that were perceived to be prejudicial or discriminatory (questions # 4, 5, 6). Finally, questions # 8, 9 and 10, focused on difficulties arising in sexual relationships that may be attributed to racism.

The racism scale used was a modified version of Diaz, Ayala, Bein, Henne and Marin's[46] racism scale. The scale variable was created by summing item responses for each participant. Specifically, item responses, which were originally coded 1 – 4, were recoded 0 – 3, and then summed, so that each participant had a racism score of anywhere from 0 – no racism experienced, to 30 – the greatest possible amount of racism that can be experienced, by the definition of this scale[46]. Respondents had to have answered 80% of the items or more to receive a score for this scaled variable. Those who answered less than 80% of the items, i.e., less than 8 of the

10 items received a missing value for the scale. Each participant's final scale score was an average, i.e., the total sum of their responses divided by the number of items that they answered, multiplied by the number of items in the scale. This scale was not validated for use in trans communities, however, we ascertained its internal consistency using Cronbach's coefficient alpha, a coefficient of reliability, to determine the extent to which the questions assessed the same phenomenon[90]. Cronbach's coefficient alpha estimated the reliability or internal consistency of the average correlation of the 10 items in the racism scale to be 0.92, which is better than the 0.7 acceptable cut-off value[91], but may not fall into the ideal range being greater than 0.9[92,93]. This may mean redundancy in some of the questions[92,93].

In some of our analyses, the variable was used in its continuous scale format, however, in order to fully explore the associations between racism and our other variables of interest, analyses were also done using a dichotomized form, which compared no reported experience of racism to reports of at least one instance of racism; a 3-level –categorized form; and a quadratic form of the racism variable. The three level variable had levels including "never experienced racism" corresponding to average scores of zero or less, "experienced racism once or twice" corresponding to average scores of more than zero but less than or equal 1, and "experienced racism more than twice" corresponding to average scores of more than 1. The quadratic variable was simply the racism variable squared.

Self-Reported Transphobia

The experience of transphobia during childhood and as an adult was assessed by 11 items. This transphobia scale asked:

1. How often have you been made fun of or called names for being trans?
2. How often have you been hit or beaten up for being trans?
3. How often have you heard that trans people are not normal?
4. How often have you been objectified or fetishized sexually because you're trans?
5. How often have you felt that being trans hurt and embarrassed your family?
6. How often have you had to try to pass as non-trans to be accepted?
7. How often do you suspect you have been turned down for a job because of your trans identity?
8. How often have you had to move away from your family or friends because you're trans?
9. How often have you experienced some form of police harassment for being trans?
10. How often do you worry about growing old alone?

11. How often do you fear you will die young?

These questions assessed both objective (questions # 1, 2, 3, 9) and subjective (questions # 4, 5, 6, 7, 8, 9, 10, 11) experiences of transphobia. Three of these items focused on actual experiences of verbal or physical abuse (questions # 1, 2, 3); one focused on experiences of perceived discrimination (questions # 7), while one focused on actual experiences of discrimination (question #9); four questions focused on perceived non acceptance by peers or family (questions # 5, 6, 8, 10); one focused on perceived sexual objectification due to trans appearance (question # 4); and one question expressed the feelings of fatalism that sometimes may accompany experiences of transphobia (question # 11).

The transphobia scale used was a modified version of a homophobia scale used by Diaz, Ayala, Bein, Henne and Marin[46]. Item responses that were originally coded 1 – 4 were recoded 0 – 3, and then summed, so that each participant had a transphobia score of anywhere from 0 – no transphobia experienced, to 33 – the greatest possible amount of transphobia that could be experienced, as determined by this scale[46]. Respondents had to have answered 80% of the items or more to receive a score for this scaled variable. Those who answered less than 80% of the items, i.e. less than 9 of the 11 transphobia items received a missing value for this scale. Each participant's final scale score was an average, i.e., the total sum of their responses divided by the number of items that they answered, multiplied by the number of items in the scale. Since, this scale was not validated for use in trans communities, we ascertained the internal consistency of the 11 items using Cronbach's alpha[90]. This value was 0.81, which is within the acceptable range for within the acceptable range for reliability without redundancy[92,93,94].

In some of our analyses, transphobia was used in its continuous scale format, however, in order to fully explore the associations between transphobia and our other variables of interest, analyses were also done using a 2-level dichotomized version of the variable, which compared no reported experience of transphobia to reports of at least one instance of transphobia; a 3-level –categorized form; and a quadratic form of the variable. The three level variable had levels including "experienced transphobia two times or less" corresponding to average scores less than or equal to 1, "experienced transphobia more than twice" corresponding to average scores of more than 1 but less than or equal 2, and "experienced transphobia many times" corresponding to average scores of more than 2.The quadratic variable was simply the transphobia variable squared.

Quadratic forms of the racism and transphobia variables were used in order to relax the assumption of a linear association between these and other variables.

2.5.3 Outcome Variable

Past-year HIV-Related Sexual Risk Behaviour

We defined three levels of past-year HIV-related sexual risk behaviour. The HIV-related sexual risk behaviours of participants were characterized as constituting either no risk, negligible or low risk; or high risk based upon guidelines established by the Canadian AIDS Society[95]. Given that no assumptions can be made about trans bodies in terms of the types of body parts each person may use for sex, we were very specific about how sex risk was conceptualized. High risk behaviours included self-reported engagement in receptive or insertive anal or genital intercourse involving flesh genitals and fluid contact. Negligible and low risk behaviours included engagement in receptive or insertive anal or genital intercourse involving no fluid contact; oral sex; receptive or insertive anal or genital sex involving fingers/hands for penetration rather than genitalia; and receptive or insertive anal or genital sex involving silicone or latex for penetration. Finally, no risk included those with no past-year sex partners.

Some exceptions were defined. For example, participants who reported having only one partner, who was a long-term partner or spouse with whom they were seroconcordant in terms of HIV status were characterized as engaging in low risk behaviour regardless of the type of sexual behaviours engaged in since partners had the same HIV status. However, if an HIV-negative participant reported having only one partner, who was a long-term partner or spouse with whom he or she was serodiscordant in terms of HIV status, then this participant was characterized as engaging in high risk sexual behaviour unless he or she indicated always using a condom, in which case the participant was engaging in negligible or low risk sexual behaviour.

2.5.4 Sex-Related Covariates of Past-Year HIV-Related Sexual Risk Behaviour

Condom/Barrier Efficacy

A condom/barrier efficacy scale containing eight items was used to assess participants' ability to protect themselves during sex. The internal consistency of the 8 item scale was assessed using Cronbach's alpha[90]. This

value was approximately 0.80, which is within the acceptable range for within the acceptable range for reliability without redundancy[92,93,94]. Responses were on a 7-point likert scale and ranged from "not at all certain" to "absolutely certain". The questions asked included:

1. When you think about using protection with a partner (for example, a condom, dental dam, glove, or plastic wrap), how certain are you that you could ask a new partner to use a protective barrier?
2. How certain are you that you could ask a partner you haven't previously been using protective barriers with to start using them?
3. How certain are you that you can refuse sex if you do not have a protective barrier available?
4. How certain are you that you could get a partner to use a protective barrier, even if you were drunk or high?
5. How certain are you that you could get a partner to use a protective barrier, even if they didn't want to?
6. How certain are you that you could get a partner who truly sees you as the gender you know yourself to be to use a protective barrier?
7. How certain are you that you could ask a non-trans partner to use a protective barrier?
8. How certain are you that you could ask a trans partner to use a protective barrier?

Response options were added and then the resulting amount was divided by the number of items answered to produce a condom/barrier efficacy score for each participant. Respondents had to have answered 80% of the items or more to receive a score for this scaled variable. Those who answered less than 80% of the items, i.e. 5 or fewer of the 8 items, received a missing value for this scale. Each participant's final scale score was an average, i.e. the total sum of their responses divided by the number of items that they answered. For this scaled variable higher scores represented greater condom/barrier efficacy. The continuous variable was used for multivariable logistic regression analysis with sex risk as the outcome, but was split into categories for use in descriptive statistics and bivariable associations. These categories were "moderate levels of condom/barrier efficacy or less" corresponding to average scores less than or equal to 2, "moderate to high condom/barrier efficacy" corresponding to average scores of greater than 2 but less than or equal to 4, and "high to very high condom/barrier efficacy" corresponding to average scores of greater than 4 but less than or equal to 5, and "very high condom/barrier efficacy" corresponding to average scores of greater than 5 up to the max score of 6.

Sexual Anxiety

Three items assessed participants' level of sexual anxiety, including:

1. I feel anxious when I think about the sexual aspects of my life.
2. I worry about the sexual aspects of my life.
3. Thinking about the sexual aspects of my life often leaves me with an uneasy feeling.

These questions were described in Snell's[96,97] Multidimensional Sexual Self-Concept Questionnaire (MSSCQ). The internal consistency of the 8 item scale was assessed using Cronbach's alpha[90]. This value was approximately 0.92; slightly above the acceptable range suggesting potential redundancy of questions[92,93]. These questions were asked only of those who reported having at least one sexual partner in their lifetime. Eligible participants could choose from the response options including, *not at all, slightly, somewhat, moderately* or *very* applicable to me. Participants had to have answered all three questions to receive a score on this variable. The sexual anxiety score was produced by adding the response options for each item and then dividing by the number of items. The continuous variable was used in a multivariable logistic regression analysis predicting sex risk. The variable was also recoded into a five level categorical variable that mapped onto the original response options for descriptive statistics and bivariable logistic regressions. These categories could be labeled "slight sexual anxiety or less" corresponding to average scores less than or equal to 1, "slight to some sexual anxiety" corresponding to average scores of more than 1 up to 2, "some to moderate sexual anxiety" corresponding to average scores of more than 2 up to 3 and "moderate to high sexual anxiety" corresponding to average scores of more than 3 up to the max of 4.

Sexual Satisfaction

Five items assessed participants' satisfaction with their sexual lives:

1. I am satisfied with the status of my own sexual fulfillment.
2. The sexual aspects of my life are personally gratifying to me.
3. The sexual aspects of my life are satisfactory, compared to most people's.
4. I am satisfied with the sexual aspects of my life.
5. I am satisfied with the way my sexual needs are currently being met.

These questions were described in Snell's[96,97] Multidimensional Sexual Self-Concept Questionnaire (MSSCQ); they were asked only of those who reported having at least one sexual partner in their lifetime. The internal consistency of the 8 item scale was assessed using Cronbach's alpha[90]. This value was approximately 0.96; significantly higher than the acceptable range suggesting potential redundancy of questions[92,93]. Eligible participants were given a sexual satisfaction score by adding each of the items in the scale and then dividing by the number of items answered. Only participants who answered at least 80% (i.e. 4 out of 5) of the items received a score, those who responded to less than 80% were marked as missing. The continuous variable was used in a multivariable logistic regression analysis predicting sex risk. The variable was also recoded into a five level categorical variable that mapped onto the original response options for descriptive statistics and bivariable logistic regressions. These categories could be labeled "little sexual satisfaction or less" corresponding to average scores of up to 1, "little to some sexual satisfaction" corresponding to average scores of more than 1 up to 2, "some to moderate sexual satisfaction" corresponding to average scores of more than 2 up to 3 and "moderate to high levels of sexual satisfaction" corresponding to average scores of more than 3 up to the max of 4. This variable is expected to be negatively correlated with variables that are positively correlated with either sexual anxiety (above) or sexual fear (below).

Sexual Fear

Four items from Snell's[96,97] Multidimensional Sexual Self-Concept Questionnaire (MSSCQ) assessed participants' level of sexual anxiety, including:

1. I am afraid of becoming sexually involved with another person.
2. I have a fear of sexual relationships.
3. I am fearful of engaging in sexual activity.
4. I don't have much fear about engaging in sex.

The internal consistency of the 8 item scale was assessed using Cronbach's alpha[90]. This value was approximately 0.84; which was within the acceptable range of good internal consistency without multi-collinearity, i.e. reliability without redundancy[92,93,94]. This question was asked only of those who reported having at least one sexual partner in their lifetime. Eligible participants could choose from five response options including, *not at all, slightly, somewhat, moderately* or *very* applicable to me. Participants had to have answered all four questions to receive a score on this variable. This sexual fear score was produced by first reverse coding the last question; *I don't have much fear about engaging in sex*, then adding the response options for each item and dividing by the

number of items. The continuous variable was used in a multivariable logistic regression analysis predicting sex risk. The variable was also recoded into a five level categorical variable that mapped onto the original response options for descriptive statistics and bivariable logistic regressions. These categories could be labeled “slight sexual fear or less” corresponding to average scores of up to 1, “slight to some sexual fear” corresponding to average scores of more than 1 up to 2, “some to moderate sexual fear” corresponding to average scores of more than 2 up to 3 and “moderate of high levels of sexual fear” corresponding to average scores of more than 3 up to the max of 4.

Trans-Related Body Image Issues

Seven items assessed participants’ sex-related worries:

1. When I think about sex, I worry that people think my body is unattractive.
2. When I think about sex, I worry that there are very few people who would want to have sex with me.
3. When I think about sex, I worry about my physical safety.
4. When I think about sex, I worry about feeling ashamed about my own body.
5. When I think about sex, I worry that once I am naked, people will not see me as my felt gender.
6. When I think about sex, I worry that people only want to have sex with me because I am trans.
7. When I think about sex, I worry that I can’t have sex until I have had surgery.

The internal consistency of the 8 item scale was assessed using Cronbach’s alpha[90]. This value was approximately 0.80; which was within the acceptable range of good internal consistency without redundancy of items[92,93,94]. There were 5 response options ranging from *not at all* to *very* much applies to me. This variable was scaled with higher scores representing greater sexual anxiety. Respondents had to have answered 80% of the items or more to receive a score for this scaled variable. Those who answered less than 80% of the items, i.e. less than 5 or fewer of the 7 items, received a missing value for this scale. Each participant’s final scale score was an average, i.e. the total sum of their responses divided by the number of items that they answered. For this scaled variable higher scores represented more body image issues or worries. The continuous variable was used in a multivariable logistic regression predicting sex risk, but was categorized to provide descriptive statistics and for bivariable associations. Participants had on average, either “few body-image issues”, “a few to some body-image issues”, “some to moderate amounts of body-image issues”, or “moderate to high amounts of body-image issues”, corresponding to average scores of zero to 1, more than 1 and up to 2, more than 2 and up to 3, and more than 3 up to a maximum average score of 4, respectively.

2.6 Data Handling

Variable recodes for the analysis, were read into the main Trans PULSE central cleaning file stored by Dr. G. Bauer. A new dataset was then created for analysis using RDSAT and for use in analysis #2 and #3. First, the newly created dataset was exported from SAS software as an Excel file, and then modified appropriately for RDSAT. The rest of the dataset contained variable names and values. This Excel file was then saved as a text file; again, this was necessary to allow RDSAT to read the file. The file was then opened in RDSAT, and all weighted prevalence estimates and 95% confidence intervals could then be produced. We also used RDSAT to produce and export individualized weights for all the dependent variables, e.g. the 3-level racism and transphobia variables for analysis 1; and the sex risk variable for analyses 2 and 3. These variable weights were transported as a text file, and then used to create new datasets, which were then merged with the original dataset containing all the recoded variables. Once merged, logistic regression procedures could be carried out.

2.7 Data Analysis of Thesis Objectives

All prevalence estimates were produced in RDSAT, while bivariable and multivariable analyses were carried out using SAS software[98]. Surveylogistic procedures were chosen over regular logistic procedures for the bivariable and multivariable regression models so that the non-random nature of the sampling method could be accounted for, and appropriate variance estimates made. Individualized weights of the outcome variables were produced in RDSAT and then imported into the SAS software, where regression analyses were carried out. Weighing involved taking into account the personal network size of each participant (i.e. number of trans people they know in Ontario who are eligible to participate in the study) in order to compensate for any over-sampling of respondents with larger social networks and to appropriately adjust for different probabilities of recruitment[78,99]. The proc surveylogistic procedure also allowed us to take clustering by shared recruiter and by recruitment tree into account through appropriate adjustment[100]. By specifying the strata and cluster variables in the surveylogistic procedure, the complex nature of the design was accounted for and the standard errors and resultant variance estimates were properly adjusted using a Taylor series linearization. Participants who shared the same recruiter were treated as being part of one cluster, while respondents sharing the same seed (most distal recruiter) were treated as being part of the same recruitment tree. The recruitment tree cluster represented a higher level of clustering in which the shared recruiter clusters were nested, and thus, the recruitment trees formed our strata. In all, there were 37 strata or recruitment trees and 243 clusters or shared recruiters. Because seeds do not have recruiters, each seed was assigned a unique shared recruiter cluster

number to ensure that they were included in the multivariable analyses. This was done to increase effective sample size to the full 433 where possible. The size of the shared recruiter clusters, varied from 1 to 3, and many were clusters were clusters of 1. Subgroup analyses were performed using the domain statement. The use of this statement allowed us to obtain accurate variance estimations[101]. Because our data appeared to be sparse in particular sub groupings, e.g. number of Aboriginals, we assessed homophily and determined the number of waves required to reach equilibrium for variables with potentially too-sparse data. As noted in the RDSAT manual[82], the number of waves required to reach equilibrium is variable-specific, and was dependent on the characteristics of initial recruits.

Using the SAS software, we specified the generalized logit model, by using the LINK=GLOGIT option. In general, the cumulative logit function, which is the default function, assumes an ordered structuring of the outcome variable, such that, the variable is simply a categorical form of a continuous variable[102]. This assumption is somewhat invalid in the case of the sex risk outcome variable as it more closely resembles a nominal variable, despite its intrinsic order. In addition, use of the GLOGIT function allowed us to specify the referent, and thus compare two levels of the variable at a time rather than taking all three levels into account at once. The low sex risk behaviour, was used as the referent, and was thus compared independently to the odds of no sex or to the odds of high risk sex. This is preferable to a model that assumes equal distance between the three levels, i.e. between “no sex” and “low risk sex” and “low risk sex” and “high risk sex”. In the case of the 3-level racism and transphobia variables used to describe who among trans person reported experiencing more or less racism and transphobia, we also specified the LINK = GLOGIT function so that we could see exactly how perceived racism and transphobia related to the other variables, rather than constrain analysis by specifying the ordinality of the racism and transphobia variables. In general, survey-weighted logit models were weighted by the dependent variable for each analysis. The odds ratios and the 95% confidence intervals about the odds ratios that were not reported in the SAS outputs were produced using Excel.

2.7.1 The Landscape of Risk: Correlates of Self-Reported Racism and Transphobia

In the first analysis, we attempted to socially locate racism and transphobia within trans communities by determining who within our sample of trans individuals were likely to report experiencing racism and transphobia. We first prepared two frequency distribution tables depicting the proportions of non-Aboriginal White, Aboriginal, and Non-Aboriginal Persons of Colour who reported experiencing each of the items in the racism and transphobia scales, and the proportion of individuals on the female-to-male versus the male-to-

female gender spectrums who reported experiencing each of these items. In these tables we also presented the proportion of individuals who had reported experiencing any racism and any transphobia. Prevalence estimates, like the ones just described, were disaggregated by ethnicity and gender spectrum because it was felt that practitioners and program managers who serve trans Ontarians may find the information more useful if presented in this way. Bivariable logistic regression was then used to explore the likelihood of reporting experiencing racism and transphobia among different groups. Models explored the association between racism and age; youth status; gender spectrum; sexual orientation; ethnicity; newcomer status; immigration status; frequency read as a person of colour; frequency read as trans; social transition status; medical transition status; marital status; educational attainment; employment; personal income; poverty; level of social support; and level of identity support. Bivariable analyses were also carried out to determine the association between each of these variables and self-reported transphobia. For these analyses, the 3-level self-reported racism and transphobia variables were used. These models were not disaggregated by either ethnicity or gender spectrum because of insufficient power due to too small cell sizes when the data were stratified by either ethnicity or gender spectrum.

2.7.2 Relationship between Self-Reported Racism, Transphobia and Past-Year HIV-Related Sexual Risk Behaviour

In the second analysis, the prevalence of past-year HIV-related sexual risk behaviour among trans Ontarians was determined and described, and polytomous logistic regression was used to assess whether and to what extent did reported exposure to racism and transphobia and their intersection impact upon this behaviour. The dependent variable, past-year HIV-related sexual risk behaviour was categorical with three levels. The second level, low sex risk behaviour, was used as the referent, and was thus compared to the odds of no sex in each model and independently to the odds of high risk sex in each model. Since this analysis was largely exploratory, the associations were assessed under a number of conditions, specifically, using continuous, categorized and quadratic transformations of the self-reported racism and transphobia variables. Associations were also assessed with and without the inclusion of the interaction term, and self-reported racism's impact on sex risk unadjusted by self-reported transphobia; self-reported transphobia's impact on sex risk unadjusted by self-reported racism was also determined. Additionally, several domain analyses were carried out to assess the impact of self-reported racism, transphobia, and their intersection on self-reported past-year HIV-related sexual risk as moderated by i) youth status, ii) gender spectrum, iii) ethnicity, iv) sexual orientation, v) medical transition status, vi) social support, vii) identity support, and viii) low income status, since the literature and

anecdotal evidence suggests that an interaction may exist between social oppression and these important characteristics. We essentially hypothesized that the relationship between racism, transphobia and HIV-related sexual risk behaviour may differ depending upon the age group, gender spectrum, ethnicity, stage of medical transition, levels of social support and identity support experienced, or whether or not individuals lived above or below the low-income cut-off. Each logit model was weighted by the dependent variable whose weights were produced using the RDSAT software.

2.7.3 Predicting Past-Year HIV-Related Sexual Risk Behaviour

In the third analysis, we built a model of association with past-year HIV-related sexual risk behaviour among trans Ontarians. This model building procedure was largely exploratory and involved four stages. The first stage corresponded to a model that included self-reported racism, transphobia, and their interaction regressed onto the self-reported past-year HIV-related sex risk behaviour variable. An arbitrary, a priori decision was made to set the alpha level at 0.1, such that, variables with $p > 0.1$ would be dropped from the model at each successive stage. However, the main predictor variables were kept in the model even if they were found to be non-significant at an alpha of 0.1. The second stage of this analysis corresponded to a model that was to include the main predictor variables and their interaction, as well as our socio-demographic variables. This model was also to include several two-way interactions between self-reported racism and those socio-demographic variables that might reasonably be expected to act as moderators, as well as two-way interactions involving self-reported transphobia and these variables. These potential moderator variables included youth status, ethnicity, sexual orientation, medical transition status, social support, identity support, and low income status. The immigration status variable was not included in analysis because of too thin data. Personal income was a quasi-continuous variable but was not used in this model because low-income, which is a transformation of personal income, was used. Low income was the optimal choice because it gave better cell sizes allowing enough power for analysis, and was identified in the literature as an important moderator. Variables with associated p-values > 0.1 were dropped at this stage. In the third stage of the model-building process, the potential proximal sex-related variables were added. These were condom/barrier efficacy, sexual anxiety, sexual satisfaction, sexual fear, and trans-related body image issues. These variables were used in their continuous forms. At this stage all variables with p-values > 0.05 were dropped, and a reduced model was assessed. The odds ratios presented were produced by the SAS software by specifying the *expb* option in the model statement. Confidence limits around the odds ratios were calculated in Excel, using the confidence limits around the beta estimates calculated using

the SAS software. These confidence limits around the betas were produced by specifying the *clparm* option in the "model" statement. Variables that were meant to be categorical were specified in a "class" statement.

3. Results

3.1 Analysis 1: Exposure to Racism and Transphobia

3.1.1 Prevalence of Self-Reported Racism and Transphobia

In accordance with the first objective of this thesis, the proportions of individuals reporting experiencing each of the 10 racism items (tables 3.1.1a and 3.1.1b), and the 11 transphobia items (tables 3.1.1c and 3.1.1d) were determined. These estimates were disaggregated independently by ethnicity and by gender spectrum. In general, 44.7% (36.6% - 52.5%) of trans persons in Ontario reported experiencing at least one instance of racism. This represented 33.9% (27.2% - 44.6%) of Caucasians, 65.3% (37.4% - 89.6%) of Aboriginals, and 90.3% (74.2% - 100.0%) of Non-Aboriginal Persons of Colour. Disaggregated by gender spectrum, we saw that 50.4% (38.6% - 61.4%) of those on the FTM spectrum reported experiencing racism, while 38.1% (26.4% - 49.7%) of those on the MTF spectrum reported experiencing racism.

Compared to self-reported racism, a much greater proportion reported experiencing transphobia. Overall, approximately 97.8% (97.1% - 100.0%) of trans persons in Ontario reported experiencing at least one instance of transphobia. This represented approximately 98.3% (97.6% - 100.0%) of trans-identified Caucasians, 90.4% (84.0% - 100.0%) of trans-identified Aboriginals, and 91.5% (86.4% – 100.0%) of trans-identified Non-Aboriginal Persons of Colour. When we examined the breakdown by gender spectrum, we saw that an almost equal proportion, about 98.2% (97.1% - 100.0%) of FTM's and 97.2% (95.8% - 100.0%) of MTF's reported experiencing transphobia. In the following tables, sample sizes are less than 433 in some cases due to missing data.

Table 3.1.1a Self-Reported Experiences of Racism Items Disaggregated by Ethnicity

		Overall % (95% CI)	Non-Ab. White % (95% CI) (n=333)	Aboriginal % (95% CI) (n=35)	Non-Aboriginal Persons of Colour % (95% CI) (n=62)
Ever made fun of while growing up…	Yes	34.8 (27.3, 42.2)	26.2 (18.5, 34.8)	51.8 (19.9, 77.4)	66.7 (47.3, 87.8)
	No	65.2 (57.8, 72.7)	73.8 (65.2, 81.6)	48.2 (22.6, 80.2)	33.4 (12.2, 52.8)
Ever hit or beaten up…	Yes	16.5 (10.1, 23.9)	11.6 (5.5, 19.7)	30.8 (7.8, 60.9)	29.7 (12.0, 50.0)
	No	83.5 (76.1, 89.9)	88.4 (80.3, 94.5)	69.2 (39.2, 92.2)	70.3 (50.0, 87.8)
Ever made fun of as an adult…	Yes	29.2 (21.5, 37.6)	19.9 (12.9, 29.1)	46.2 (18.4, 74.5)	69.0 (47.4, 86.0)
	No	70.8 (62.4, 78.5)	80.1 (70.9, 87.1)	53.8 (25.5, 81.6)	31.0 (14.0, 52.7)
Ever treated rudely or unfairly…	Yes	27.8 (20.9, 35.2)	18.4 (12.2, 26.5)	41.2 (16.4, 70.8)	64.5 (42.5, 83.9)
	No	72.2 (64.8, 79.2)	81.6 (73.5, 87.8)	58.8 (29.2, 83.6)	35.5 (16.1, 57.5)
Ever harassed by police…	Yes	10.6 (5.2, 16.1)	4.2 (0.7, 10.5)	34.7 (7.4, 61.6)	26.4 (10.2, 44.0)
	No	89.4 (83.9, 94.8)	95.8 (89.5, 99.3)	65.3 (38.4 92.7)	73.6 (56.1, 89.8)
Ever turned down for a job…	Yes	10.9 (5.9, 16.3)	7.20 (2.2, 11.8)	33.4 (3.5, 58.0)	22.1 (6.8, 37.4)
	No	89.1 (83.7, 94.1)	92.8 (88.2, 97.9)	66.6 (42.1, 96.5)	77.9 (62.7, 93.2)
Ever been uncomfortable in trans spaces…	Yes	9.6 (5.4, 14.5)	2.8 (1.3, 5.0)	30.6 (4.7, 62.5)	31.40 (12.0, 49.6)
	No	90.4 (85.6, 94.6)	97.2 (95.0, 98.7)	69.4 (37.7, 95.3)	68.6 (50.4, 88.0)
Ever had difficulty finding lovers…	Yes	12.3 (7.0, 18.4)	8.0 (4.3, 17.3)	26.4 (2.1, 55.0)	32.7 (13.9, 52.7)
	No	87.7 (81.6, 93.0)	92.0 (82.7, 95.7)	73.6 (45.0, 97.9)	67.3 (47.3, 86.1)
Ever been objectified sexually…	Yes	12.8 (7.7, 18.5)	4.1 (1.2, 8.0)	53.3 (22.3, 79.7)	37.2 (16.6, 54.6)
	No	87.2 (81.5, 92.3)	95.9 (92.0, 98.8)	46.7 (20.3, 77.8)	62.8 (45.4, 83.5)
Partners pay more attention to race than you as a person…	Yes	11.7 (6.3, 17.3)	4.8 (1.9, 11.0)	31.4 (6.2, 58.5)	35.1 (15.6, 54.3)
	No	88.3 (82.7, 93.7)	95.2 (89.1, 98.2)	68.6 (41.5, 93.8)	64.9 (45.7, 84.4)
OVERALL	Yes (score > 0)	44.7 (36.6, 52.5)	33.9 (27.2, 44.6)	65.3 (37.4, 89.6)	90.3 (74.2, 100.0)
	No (score = 0)	55.3 (47.5, 63.4)	66.1 (55.4, 72.8)	34.7 (10.4, 62.6)	9.7 (0.0, 25.9)

Table 3.1.1b Self-Reported Experiences of Racism Items Disaggregated by Gender Spectrum

		Female-to-Male Spectrum % (95% CI) (n=227)	Male-to-Female Spectrum % (95% CI) (n=205)
Ever made fun of while growing up…	Yes	39.1 (27.9, 49.2)	29.4 (18.8, 40.1)
	No	60.9 (50.8, 72.1)	70.6 (59.9, 81.2)
Ever hit or beaten up…	Yes	14.5 (7.0, 23.9)	18.6 (8.6, 30.3)
	No	85.5 (76.1, 93.0)	81.4 (69.7, 91.4)
Ever made fun of as an adult…	Yes	30.9 (20.5, 43.3)	26.5 (15.8, 38.1)
	No	69.1 (56.7, 79.5)	73.5 (61.9, 84.2)
Ever treated rudely or unfairly…	Yes	27.8 (18.4, 38.3)	27.1 (16.4, 38.8)
	No	72.2 (61.7, 81.6)	72.9 (61.2, 83.7)
Ever harassed by police…	Yes	10.3 (3.2, 17.0)	11.3 (3.7, 19.5)
	No	89.7 (83.0, 96.8)	88.7 (80.5, 96.3)
Ever turned down for a job…	Yes	8.5 (2.9, 16.0)	13.4 (5.6, 22.0)
	No	91.5 (84.0, 97.1)	86.6 (78.0, 94.4)
Ever been uncomfortable in trans spaces…	Yes	9.6 (3.5, 16.3)	9.5 (3.9, 16.2)
	No	90.4 (83.7, 96.5)	90.5 (83.8, 96.1)
Ever had difficulty finding lovers…	Yes	12.4 (5.0, 18.7)	11.9 (3.8, 21.6)
	No	87.6 (81.4, 95.0)	88.1 (78.4, 96.2)
Ever been objectified sexually…	Yes	13.5 (6.1, 20.5)	11.7 (4.5, 20.4)
	No	86.5 (79.5, 93.9)	88.3 (79.6, 95.5)
Partners pay more attention to race than you as a person…	Yes	12.9 (5.4, 20.9)	10.4 (4.0, 18.1)
	No	87.1 (79.1, 94.6)	89.6 (81.9, 96.0)
OVERALL	Yes (score > 0)	50.4 (38.6, 61.4)	38.1 (26.4, 49.7)
	No (score = 0)	49.6 (38.7, 61.4)	61.9 (50.3, 73.6)

Table 3.1.1c Self-Reported Experiences of Transphobia Items Disaggregated by Ethnicity

		Overall % (95% CI)	Non-Ab. White % (95% CI) (n=333)	Aboriginal % (95% CI) (n=35)	Non-Aboriginal Persons of Colour % (95% CI) (n=62)
Ever made fun of…	Yes	72. 6 (67.7, 80.4)	76.5 (70.3, 84.6)	88.9 (66.3, 100.0)	53.2 (29.3, 73.0)
	No	27.4 (19.6, 32.3)	23.5 (15.4, 29.7)	11.1 (0.0, 33.7)	46.8 (27.0, 70.7)
Ever hit or beaten up…	Yes	26.3 (19.1, 33.5)	27.1 (19.3, 35.8)	41.5 (11.9, 69.4)	10.0 (2.7, 19.9)
	No	73.7 (66.5, 80.9)	72.9 (64.2, 80.7)	58.5 (30.6, 88.1)	90.0 (80.2, 97.3)
Ever heard that trans people aren't normal…	Yes	95.8 (92.8, 97.9)	95.4 (91.7, 98.0)	91.3 (78.4, 100.0)	96.1 (87.5, 100.0)
	No	4.2 (2.1, 7.2)	4.6 (2.0, 8.3)	8.7 (0.0, 21.6)	3.9 (0.0, 12.5)
Ever objectified or fetishized sexually…	Yes	57.4 (49.0, 65.1)	59.2 (50.2, 68.2)	70.4 (41.7, 92.3)	45.9 (27.3, 64.8)
	No	42.6 (34.9, 51.0)	40.8 (31.8, 49.8)	29.6 (7.7, 58.3)	54.1 (35.2, 72.7)
Ever felt that being trans hurt or embarrassed family	Yes	78.3 (71.7, 84.9)	74.9 (67.0, 82.5)	82.9 (51.3, 96.1)	92.5 (81.6, 99.1)
	No	21.7 (15.5, 28.3)	25.1 (17.5, 33.0)	17.1 (3.9, 48.7)	7.5 (9.0, 18.5)
Ever tried to pass as non-trans…	Yes	74.0 (67.7, 82.0)	72.8 (65.4, 81.9)	53.9 (28.4, 90.4)	73.2 (50.9, 93.5)
	No	26.0 (18.0, 32.3)	27.1 (18.1, 34.6)	46.1 (9.6, 71.7)	26.8 (6.6, 49.1)
Ever been turned down for a job…	Yes	38.9 (31.5, 46.5)	35.4 (27.7, 44.5)	70.5 (41.3, 87.8)	47.6 (27.3, 69.3)
	No	61.1 (53.5 68.5)	64.6 (55.5, 72.3)	29.5 (12.2, 58.7)	52.4 (30.8, 72.7)
Ever had to move away… because trans	Yes	31.9 (24.6, 39.3)	31.5 (22.8, 38.9)	53.7 (21.1, 77.0)	27.6 (12.0, 46.8)
	No	68.1 (60.7, 75.4)	68.5 (61.1, 77.2)	46.3 (23.0, 78.9)	72.4 (53.2, 88.0)
Ever been harassed by police…	Yes	23.6 (17.0, 30.4)	21.4 (15.1, 30.5)	64.9 (31.1, 85.7)	15.5 (3.9, 30.2)
	No	76.4 (69.6, 83.0)	78.6 (69.5, 84.9)	35.1 (14.3, 68.9)	84.5 (69.8, 96.1)
Ever worry about growing old alone	Yes	77.1 (69.6, 83.6)	78.9 (71.2, 86.3)	61.5 (37.9, 90.3)	70.9 (58.8, 89.6)
	No	22.9 (16.4, 30.4)	21.1 (13.7, 28.8)	38.5 (9.7, 62.1)	29.1 (10.4, 41.2)
Ever fear will die young…	Yes	66.8 (58.6, 75.1)	69.5 (58.3, 76.9)	73.4 (51.4, 91.9)	54.9 (38.1, 76.0)
	No	33.2 (24.9, 41.4)	30.5 (23.1, 41.7)	26.6 (8.1, 48.6)	45.1 (24.0, 61.9)
OVERALL	Yes (score > 0)	97.8 (97.1, 100.0)	98.3 (97.6, 100.0)	90.4 (84.0, 100.0)	91.5 (86.4, 100.0)
	No (score = 0)	2.2 (0.0, 2.9)	1.7 (0.0, 2.4)	9.6 (0.0, 16.0)	8.5 (0.0, 13.6)

Table 3.1.1d Self-Reported Experiences of Transphobia Items Disaggregated by Gender Spectrum

		Female-to-Male Spectrum % (95% CI) (n=227)	Male-to-Female Spectrum % (95% CI) (n=205)
Ever made fun of…	Yes	67.2 (57.5, 76.70)	79.7 (73.5, 90.0)
	No	32.8 (23.3, 42.6)	20.3 (10.0, 26.5)
Ever hit or beaten up…	Yes	20.2 (11.8, 29.6)	33.5 (21.8, 45.1)
	No	79.8 (70.4, 88.2)	66.5 (54.9, 78.2)
Ever heard that trans people aren't normal…	Yes	96.1 (92.1, 98.9)	95.1 (90.5, 98.7)
	No	3.9 (1.1, 7.9)	4.9 (1.3, 9.5)
Ever objectified or fetishized sexually…	Yes	52.7 (41.4, 63.5)	63.5 (51.0, 75.3)
	No	47.3 (36.5, 58.6)	36.5 (24.7, 49.0)
Ever felt that being trans hurt or embarrassed family	Yes	81.1 (71.9, 89.4)	75.1 (65.8, 85.3)
	No	18.9 (10.6, 28.1)	24.9 (14.7, 34.2)
Ever tried to pass as non-trans…	Yes	72.8 (65.8, 84.9)	74.7 (64.9, 85.8)
	No	27.2 (15.1, 34.2)	25.3 (14.2, 35.1)
Ever been turned down for a job…	Yes	40.1 (30.1, 50.9)	37.5 (27.1, 48.3)
	No	59.9 (49.1, 69.9)	62.5 (51.7, 72.9)
Ever had to move away… because trans	Yes	24.8 (16.4, 33.9)	41.0 (29.8, 52.5)
	No	75.2 (66.1, 83.6)	59.0 (47.5, 70.2)
Ever been harassed by police…	Yes	19.1 (11.0, 28.6)	28.7 (18.4, 39.3)
	No	80.9 (71.5, 89.0)	71.3 (60.7, 81.6)
Ever worry about growing old alone	Yes	68.8 (56.9, 79.4)	87.3 (79.9, 93.0)
	No	31.2 (20.6, 43.1)	12.7 (7.0, 20.2)
Ever fear will die young…	Yes	66.2 (55.2, 78.2)	68.1 (55.9, 79.4)
	No	33.8 (21.8, 44.8)	31.9 (20.6, 44.1)
OVERALL	Yes (score > 0)	98.2 (97.1, 100.0)	97.2 (95.8, 100.0)
	No (score = 0)	1.8 (0.0, 2.9)	2.8 (0.0, 4.2)

Tables 3.1.1e and 3.1.1f below show the prevalence of self-reported racism among trans Ontarians using the 3-level form of the scaled racism variable. Generally speaking, 55.4% (47.3% - 63.5%) of trans Ontarians can be expected to report experiencing no racism, about 34.8% (27.5% - 43.0%) will report experiencing racism once or twice, and approximately 9.7% (4.1% - 16.0%) will report experiencing racism more than twice by our definitions. The prevalence of self-reported racism disaggregated by ethnicity and gender spectrum can be seen below.

Table 3.1.1e Prevalence of Self-Reported Racism (3-Level Categorical) Disaggregated by Ethnicity

		Overall % (95% CI)	**Non-Ab. White % (95% CI)**	**Aboriginal % (95% CI)**	**Non-Aboriginal Persons of Colour % (95% CI)**
			(n=307)	**(n=32)**	**(n=58)**
Experienced Racism	Never*	55.4 (47.3, 63.5)	65.7 (53.6, 71.7)	35.5 (10.4, 61.4)	11.5 (0.0, 29.2)
	Once or twice**	34.8 (27.5, 43.0)	28.9 (23.6, 40.3)	44.9 (19.3, 75.9)	61.9 (42.7, 84.3)
	More than twice***	9.7 (4.1, 16.0)	5.4 (1.2, 10.7)	19.6 (1.2, 49.5)	26.6 (6.5, 47.1)

*to be referred to as “no” self-reported racism in bivariable and multivariable models.

** to be referred to as “low” levels of self-reported racism in bivariable and multivariable models.

*** to be referred to as “moderate” levels of self-reported racism in bivariable and multivariable models.

Table 3.1.1f Prevalence of Self-Reported Racism (3-Level Categorical) Disaggregated by Gender Spectrum

		Female-to-Male Spectrum % (95% CI)	**Male-to-Female Spectrum % (95% CI)**
		(n=208)	**(n=191)**
Experienced Racism	Never*	49.4 (38.1, 61.4)	62.4 (51.0, 74.3)
	Once or twice**	39.9 (28.9, 51.8)	28.6 (19.2, 39.2)
	More than twice***	10.7 (2.3, 20.1)	8.9 (2.0, 16.6)

*to be referred to as “no” self-reported racism in bivariable and multivariable models.

** to be referred to as “low” levels of self-reported racism in bivariable and multivariable models.

*** to be referred to as “moderate” levels of self-reported racism in bivariable and multivariable models.

Tables 3.1.1g and 3.1.1h below display the prevalence of self-reported transphobia among trans Ontarians as described by the 3-level categorical form of the scaled transphobia variable. Overall, approximately of 38.6% (30.8% - 46.2%) trans Ontarians can be expected to report experiencing transphobia two times or less, approximately 50.5% (42.7% - 58.4%) will report experiencing transphobia more than twice up to many times, while about 10.9% (6.3% - 16.5%) report experiencing transphobia many times. The prevalence of self-reported transphobia disaggregated by ethnicity and by gender spectrum is described below.

Table 3.1.1g Prevalence of Self-Reported Transphobia (3-Level Categorical) Disaggregated by Ethnicity

		Overall % (95% CI)	**Non-Ab. White % (95% CI)**	**Aboriginal % (95% CI)**	**Non-Aboriginal Persons of Colour % (95% CI)**
			(n=310)	**(n=32)**	**(n=57)**
Experienced Transphobia	Two times or Less*	38.6 (30.8, 46.2)	35.0 (25.2, 42.2)	25.6 (7.0, 51.1)	57.8 (38.9, 80.0)
	More than twice**	50.5 (42.7, 58.4)	53.4 (46.3, 63.5)	49.2 (21.7, 78.8)	38.1 (17.5, 56.1)
	Many times***	10.9 (6.3, 16.5)	11.7 (6.1, 18.2)	25.2 (2.4, 53.9)	4.1 (0.0, 9.9)

*to be referred to as “low” levels of self-reported transphobia in bivariable and multivariable models.

** to be referred to as “moderate” levels of self-reported transphobia in bivariable and multivariable models.

*** to be referred to as “high” levels of self-reported transphobia in bivariable and multivariable models.

Table 3.1.1h Prevalence of Self-Reported Transphobia (3-Level Categorical) Disaggregated by Gender Spectrum

		Female-to-Male Spectrum % (95% CI)	**Male-to-Female Spectrum % (95% CI)**
		(n =210)	**(n =191)**
Experienced Transphobia	Two times or Less*	47.0 (34.9, 58.4)	28.6 (18.3, 38.8)
	More than twice**	44.2 (32.3, 54.9)	57.9 (47.9, 69.4)
	Many times***	8.8 (3.5, 17.3)	13.6 (5.7, 21.9)

*to be referred to as “low” levels of self-reported transphobia in bivariable and multivariable models.

** to be referred to as “moderate” levels of self-reported transphobia in bivariable and multivariable models.

*** to be referred to as “high” levels of self-reported transphobia in bivariable and multivariable models.

The table below displays the weighted prevalence estimates of variables assessed for an association to self-reported racism, transphobia and sexual risk behaviour. The estimates and 95% confidence intervals were produced using RDSAT.

Table 3.1.1i Weighted Prevalence Estimates of Potential Correlates of Self-Reported Racism and Transphobia

Potential Correlate (n)	**% (95% C.I.)**
Youth Status	
16-24 (123)	34.9 (26.8, 44.3)
25+ (307)	65.1 (55.7, 73.2)
Gender Spectrum	
FTM (227)	52.8 (44.5, 62.0)
MTF (205)	47.2 (38.0, 55.6)
Sexual Orientation	
Bisexual or Pansexual (146)	30.6 (24.1, 37.9)
Gay or Lesbian (84)	19.6 (13.3, 25.5)
Straight/Heterosexual (69)	22.9 (16.0, 31.1)
Asexual (8)	2.3 (0.30, 4.7)
Other Sexual Minority (95)	19.5 (13.4, 26.3)
Unsure or Questioning (17)	5.0 (1.8, 8.9)
Ethnicity	
Non-Aboriginal Whites (333)	77.4 (71.3, 84.3)
Aboriginal Persons (35)	6.8 (3.6, 10.4)
Non-Aboriginal Persons of Colour (62)	15.7 (9.8, 21.6)
Newcomer Status	
In Canada for less than 5 years (13)	3.7 (1.3, 7.4)
In Canada for 5 or more years (389)	96.3 (92.6, 98.7)
Immigration Status	
Canadian Citizen (406)	94.4 (90.7, 97.4)
Permanent Resident (17)	3.1 (1.0, 5.8)
In Canada on a Work, Student, or Visitor Visa versus (7)	2.5 (0.5, 5.5)
Frequency Read as a Person of Colour	
Often or frequently Perceived as a Person of Color (POC) (39)	11.1 (6.0, 17.1)
Sometimes or About Half the Time perceived as a POC (20)	4.7 (1.6, 8.2)
Rarely or Very Rarely perceived as a POC (38)	6.9 (3.7, 10.9)
Never (306)	77.3 (70.0, 84.1)
Frequency Read as Trans	
Often or frequently Perceived as Trans (56)	10.4 (6.2, 15.1)
Sometimes or About Half the Time Perceived as Trans (103)	19.2 (14.6, 24.7)
Rarely or Very Rarely Perceived as Trans (203)	51.2 (43.4, 59.1)
Never Perceived as Trans (70)	19.3 (12.9, 25.8)

Medical Transition Status	
Completed transition (156)	26.1 (19.0, 33.6)
Transition in process (116)	24.3 (18.5, 30.7)
Not begun or not planning to transition (160)	49.6 (40.9, 58.2)
Social transition status	
Full-time (273)	47.9 (40.8, 57.2)
Part-time (106)	30.0 (21.5, 36.1)
None of the Time (49)	22.2 (15.4, 30.0)
Legal Marital Status	
Never Married (255)	61.1 (52.6, 69.3)
Separated, Divorced or Widowed (65)	15.3 (10.0, 22.0)
Living Common-law (41)	9.2 (5.2, 14.4)
Married (66)	14.4 (8.7, 19.7)
Education	
Non-completion of High School (49)	12.5 (8.0, 18.7)
Graduation from High School (53)	16.2 (10.9, 21.7)
Some Postsecondary School (112)	28.2 (22.2, 35.6)
Postsecondary Graduation (216)	43.1 (34.3, 50.6)
Employment	
Unemployed (41)	11.7 (6.4, 16.4)
Employed Part-time (32)	8.2 (4.4, 13.1)
Self-employed Part-time (21)	4.8 (1.8, 8.5)
Employed Full-time (122)	30.7 (23.6, 37.4)
Self-employed Full-time (23)	5.2 (1.6, 9.5)
Other (Student, Retired, or on Disability) (165)	39.3 (32.8, 48.0)
Personal Income	
Less than $5000 (63)	16.3 (11.3, 23.9)
$5000 – Less than $15,000 (114)	31.7 (24.8, 39.6)
$15,000 – less than $30,000 (79)	21.1 (14.7, 28.3)
$30,000 – less than $50,000 (64)	17.2 (10.4, 22.9)
$50,000 – less than $80,000 (45)	7.1 (3.1, 10.8)
$80,000 or more (29)	6.5 (2.5, 12.1
Low Income /Poverty	
Below the Low Income Cut-off (146)	33.7 (26.7, 41.6)
Not Below the Low Income Cut-off (287)	66.3 (58.4, 73.3)
Social Support	
A Little of the time (31)	12.4 (7.3, 19.4)
Some of the time (77)	22.1 (16.1, 28.1)
Most of the time (143)	32.0 (24.1, 38.8)
All of the time (153)	33.5 (26.2, 41.6)
Identity Support	
Not at all or not very supportive (20)	10.0 (4.1, 14.5)
Somewhat supportive (92)	33.1 (25.4, 41.0)
Very supportive (257)	56.9 (49.2, 66.6)

3.1.2 Regression Analyses: Self-Reported Racism

The tables below are the results of our exploratory analyses of those variables potentially associated with self-reported racism and transphobia. In both cases, a table of bivariable associations and a table of multivariable associations are shown. Recall that self-reported racism had three levels: no, low, and moderate, corresponding to reporting never having had an experience of racism, reporting one or two experiences of racism, and reporting more than two experiences of racism, respectively. Therefore two comparisons were made in exploring associations: low versus no, and moderate versus no. Self-reported transphobia also had three levels: low, moderate, and high, corresponding to reports of two or less experiences of transphobia, reports of more than two experiences of transphobia, and reports of many instances of transphobia, respectively. Therefore two comparisons were made in exploring associations: moderate versus low, and high versus low.

In the bivariable models depicting associations with self-reported racism we found that age (continuous and categorized), sexual orientation, ethnicity, frequency read as a person of colour, frequency read as trans, marital status, education, high school status, employment and personal income were found to be significantly associated with self-reported racism overall, while associations with youth status and immigration status approached significance. In the multivariable model, age, ethnicity, marital status, high school completion status, low income status and identity support were all significantly associated with self-reported racism. The overall impact of newcomer status, frequency read as trans, and marital status in the model approached significance.

In this model, if two or three variables were a transformation of one another, then only one would be used to avoid issues similar to multi-collinearity, e.g. age, but not age category. Additionally, a number of variables were excluded due to inadequate sample sizes across certain levels of the variables, leading to inestimable odds ratios or extremely large confidence intervals; these were immigration status, educational status, frequency read as a POC, and personal income. This was not of great concern because other variables, which could be estimated, provided similar information, in some cases, e.g. low-income status instead of personal income. On the other hand, although the ethnicity variable also produced rather large confidence intervals, it was retained because it was expected to be very relevant in a model exploring associations to racism, and because the frequency read as a POC variables was excluded. High school status was also retained despite producing large confidence intervals, because the education variable had to be excluded, and we wanted to somehow explore an association between racism and educational status.

In this multivariable model, older individuals had greater odds of reporting experiencing moderate levels of rather than none (OR = 1.21, CI = 1.09 – 1.32, p <0.0001). Those who had been in Canada for 5 or more years had much lower odds of reporting experiencing moderate levels of racism rather than none compared to newcomers to Canada, net of the other variables in the model (OR = 0.05, CI = 0.00 – 0.69, p = 0.0284). Those living in common-law relationships had almost 16 times as great the odds of reporting moderate levels of racism (rather than none) compared to those who were never married (OR = 15.83, CI = 1.08 – 231.60, p = 0.0437). Those living above the low-income level had lower odds of reporting moderate levels of racism rather than none compared to those living below the LICO (OR = 0.05, CI = 0.01 – 0.38, p =0.0034). Those with more identity support also had lower odds of reporting experiencing moderate levels versus no racism (OR = 0.03, CI = 0.00 – 0.30, p = 0.0022). See tables below for more details about the magnitude and direction of associations.

Table 3.1.2a Bivariable Associations: Correlates of Self-Reported Racism among Trans Ontarians

Potential Correlate (n)	**Self-Reported Racism, Low (145) vs. No (212)**	**Self-Reported Racism, Moderate (41) vs. No (212)**	
	OR (95% C.I.), p-value	**OR (95% C.I.), p-value**	**Overall p-value**
Age	0.95 (0.93, 0.98), 0.0012	1.01 (0.98, 1.04), 0.5003	P = 0.0015
Age Category			
16-24	Ref (1.00)	Ref (1.00)	P <0.0001
25-34	0.73 (0.34, 1.55), 0.4115	1.11 (0.20, 6.04), 0.9034	
35-44	0.63 (0.26, 1.55), 0.3164	4.64 (0.79, 27.31), 0.0901	
45-54	0.34 (0.12, 0.98), 0.0449	5.88 (0.83, 41.93), 0.0771	
55-64	0.16 (0.03, 0.74), 0.0192	0.16 (0.02, 1.57), 0.1162	
65+	0.04 (0.00, 0.41), 0.0068	<.001 (<.001, <.001), <.0001	
Youth Status			
16-24	Ref (1.00)	Ref (1.00)	P = 0.0547
25+	0.53 (0.28, 1.02), 0.0564	2.27 (0.48, 10.77), 0.3033	
Gender Spectrum			
FTM	Ref (1.00)	Ref (1.00)	P = 0.5508
MTF	0.69 (0.35, 1.36), 0.2834	0.98 (0.34, 2.85), 0.9738	
Sexual Orientation			
Straight/Heterosexual	Ref (1.00)	Ref (1.00)	P < 0.0001
Bisexual or Pansexual	1.30 (0.51, 3.31), 0.5834	1.10 (0.24, 5.18), 0.9000	
Gay or Lesbian	1.58 (0.55, 4.59), 0.3975	2.64 (0.39, 17.81), 0.3200	
Asexual	2.44 (0.28, 21.45), 0.4222	<.001 (<.001, <.001), <.0001	
Other Sexual Minority	2.49 (0.91, 6.76), 0.0744	6.58 (1.36, 31.74), 0.0190	
Unsure or Questioning	0.57 (0.11, 2.96), 0.5076	0.07 (0.01, 0.78), 0.0309	
Sexual Orientation (4 levels)			
Straight/Heterosexual	Ref (1.00)	Ref (1.00)	P = 0.4442
Bisexual or Pansexual	1.30 (0.51, 3.29), 0.5814	1.10 (0.24, 5.14), 0.8994	
Gay or Lesbian	1.58 (0.55, 4.57), 0.3950	2.64 (0.39, 17.63), 0.3175	
Other Sexual Minority	1.79 (0.73, 4.40), 0.2030	3.60 (0.78, 16.63), 0.1012	
Ethnicity			
Non-Aboriginal Whites	Ref (1.00)	Ref (1.00)	P = 0.0003
Aboriginal Persons	2.67 (0.87, 8.22), 0.0861	9.86 (1.90, 51.13), 0.0064	
Non-Aboriginal Persons of Colour	14.77 (2.93, 74.37), 0.0011	43.01 (6.35, 291.20), 0.0001	
Newcomer Status			
In Canada for less than 5 years	Ref (1.00)	Ref (1.00)	P = 0.1549
In Canada for 5 or more years	0.47 (0.06, 3.37), 0.4490	0.18 (0.03, 1.03), 0.0534	
Immigration Status			
Canadian Citizen	Ref (1.00)	Ref (1.00)	
Permanent Resident	3.82 (0.81, 18.03), 0.0900	5.34 (0.79, 35.87), 0.0849	P = 0.1780
Work, Student, or Visitor Visa	5.45 (0.52, 57.08), 0.1570	3.28 (0.30, 35.43), 0.3289	
Frequency Read as a Person of Colour (POC)			
Never perceived as a POC	Ref (1.00)	Ref (1.00)	P < 0.0001

Rarely or Very Rarely perceived as a POC	4.90 (1.47, 16.38), 0.0099	0.65 (0.06, 7.16), 0.7268	
Sometimes or Half the time perceived as a POC	>999.99 (>999.99, >999.99) <.0001	>999.99 (>999.99, >999.99) <.0001	
Often or Frequently Perceived as a POC	11.41 (2.93, 44.48), 0.0005	47.54 (9.50, 237.74), <.0001	
Frequency Read as Trans			
Never Perceived as Trans	Ref (1.00)	Ref (1.00)	
Rarely or Very Rarely Perceived as Trans	1.87 (0.84, 4.16), 0.1252	0.99 (0.20, 4.88), 0.9895	
Sometimes or Half the Time Perceived as Trans	1.70 (0.72, 4.00), 0.2254	0.32 (0.06, 1.75), 0.1911	P = 0.0045
Often or frequently Perceived as Trans	2.33 (0.74, 7.36), 0.1501	5.59 (1.01, 31.06), 0.0491	
Medical Transition Status			
Not begun or not planning to transition	Ref (1.00)	Ref (1.00)	
Transition in process	1.25 (0.55, 2.82), 0.5967	1.17 (0.30, 4.52), 0.8257	P = 0.9073
Completed transition	1.35 (0.63, 2.88), 0.4403	1.60 (0.46, 5.56), 0.4612	
Social Transition Status			
None of the Time	Ref (1.00)	Ref (1.00)	
Part-time	3.49 (1.03, 11.85), 0.0454	1.33 (0.22, 7.93), 0.7569	P = 0.3655
Full-time	2.66 (0.90, 7.85), 0.0756	1.08 (0.23, 5.09), 0.9145	
Legal Marital Status (4 levels)			
Never Married	Ref (1.00)	Ref (1.00)	
Separated, Divorced or Widowed	0.33 (0.12, 0.92), 0.0341	0.30 (0.09, 1.03), 0.0560	P = 0.0101
Living Common-law	0.89 (0.32, 2.45), 0.8243	2.88 (0.60, 13.80), 0.1867	
Married	0.28 (0.11, 0.70), 0.0064	1.28 (0.23, 7.14), 0.7768	
Legal Marital Status (3 levels)			
Never Married	Ref (1.00)	Ref (1.00)	
Separated, Divorced or Widowed	0.33 (0.12, 0.92), 0.0337	0.30 (0.09, 1.03), 0.0554	P = 0.0126
Married or Living Common-law	0.49 (0.22, 1.11), 0.0858	1.84 (0.50, 6.76), 0.3613	
Education			
Non-completion of High School	Ref (1.00)	Ref (1.00)	
Graduation from High School	1.67 (0.44, 6.44), 0.4538	70.40 (5.60, 883.78), 0.0010	
Some Postsecondary School	1.69 (0.52, 5.50), 0.3813	66.67 (8.07, 550.85), <.0001	P = 0.0009
Postsecondary Graduation	1.01 (0.36, 2.86), 0.9788	72.90 (10.30, 516.02), <.0001	
High School Completion Status			
Did not complete high school	Ref (1.00)	Ref (1.00)	
Did complete high school	1.32 (0.47, 3.71), 0.5974	70.66 (10.26, 486.42), <.0001	P < 0.0001
Employment (6 levels)			
Unemployed	Ref (1.00)	Ref (1.00)	
Employed Part-time	2.32 (0.68, 7.84), 0.1774	1.68 (0.24, 11.91), 0.6014	
Self-employed Part-time	1.99 (0.42, 9.51), 0.3868	12.03 (1.43, 101.10), 0.0220	P = 0.0136
Employed Full-time	1.27 (0.43, 3.78), 0.6644	13.37 (2.40, 74.44), 0.0031	
Self-employed Full-time	0.43 (0.08, 2.29), 0.3244	1.53 (0.15, 15.41), 0.7173	
Other (Student, Retired, or on Disability)	1.28 (0.43, 3.83), 0.6583	5.84 (0.84, 40.81), 0.0754	
Employment (4 levels)			
Unemployed	Ref (1.00)	Ref (1.00)	P = 0.0366
Employed Part-time (incl. self employment)	2.24 (0.71, 7.04), 0.1698	4.27 (0.70, 26.13), 0.1167	

Employed Full-time (incl. self employment)	1.11 (0.38, 3.22), 0.8550	11.01 (2.03, 59.82), 0.0055	
Other (Student, Retired, or on Disability)	1.28 (0.43, 3.81), 0.6566	5.84 (0.84, 40.39), 0.0739	
Personal Income (pseudo-continuous)	0.85 (0.73, 0.98), 0.0293	1.07 (0.88, 1.31), 0.5013	P = 0.0380
Personal Income			
Less than $5000	Ref (1.00)	Ref (1.00)	P = 0.0044
$5000 – Less than $15,000	0.97 (0.33, 2.83), 0.9531	8.36 (1.65, 42.40), 0.0104	
$15,000 – less than $30,000	0.83 (0.25, 2.73), 0.7546	2.66 (0.41, 17.40), 0.3073	
$30,000 – less than $50,000	0.62 (0.18, 2.11), 0.4398	16.52 (3.00, 90.85), 0.0013	
$50,000 – less than $80,000	0.15 (0.04, 0.60), 0.0079	1.91 (0.29, 12.66), 0.5048	
$80,000 or more	0.45 (0.10, 1.95), 0.2850	8.71 (0.76, 99.64), 0.0819	
Low Income /Poverty			
Below the Low Income Cut-off	Ref (1.00)	Ref (1.00)	P = 0.4797
Not Below the Low Income Cut-off	0.83 (0.42, 1.64), 0.5958	0.50 (0.16, 1.55), 0.2308	
Social Support			
A little of the time or less	Ref (1.00)	Ref (1.00)	P = 0.2856
A little to some of the time	1.08 (0.30, 3.93), 0.9057	0.12 (0.02, 0.71), 0.0190	
Some to most of the time	1.08 (0.32, 3.69), 0.9040	0.46 (0.10, 2.12), 0.3164	
Most to all of the time	1.08 (0.32, 3.69), 0.9048	0.37 (0.07, 2.07), 0.2593	
Identity Support			
Not at all or not very supportive	Ref (1.00)	Ref (1.00)	P = 0.4221
Not very to somewhat supportive	3.50 (0.86, 14.27), 0.0801	3.14 (0.29, 33.55), 0.3444	
Somewhat to very supportive	3.39 (0.90, 12.73), 0.0710	1.90 (0.21, 16.93), 0.5644	
Identity Support (dichotomized)			
Not at all to somewhat supportive	Ref (1.00)	Ref (1.00)	P = 0.6844
Somewhat to very supportive	1.25 (0.62, 2.53), 0.5405	0.77 (0.25, 2.40), 0.6547	

Table 3.1.2b Multivariable Associations: Correlates of Self-Reported Racism among Trans Ontarians

Potential Correlate (n)	**Self-Reported Racism, Low (120) vs. No (169)**	**Self-Reported Racism, Moderate (33) vs. No (169)**	
	OR (95% C.I.), p-value	**OR (95% C.I.), p-value**	**Overall p-value**
Age	1.00 (0.96, 1.04), 0.8906	1.21 (1.10, 1.32), <.0001	p = 0.0003
Gender Spectrum			
FTM	Ref (1.00)	Ref (1.00)	P = 0.6996
MTF	1.27 (0.52, 3.08), 0.5984	0.58 (0.08, 4.16), 0.5917	
Sexual Orientation (4 levels)			
Straight/Heterosexual	Ref (1.00)	Ref (1.00)	P = 0.5129
Bisexual or Pansexual	1.56 (0.47, 5.11), 0.4666	0.42 (0.04, 4.55), 0.4713	
Gay or Lesbian	1.42 (0.39, 5.21), 0.5944	2.68 (0.26, 27.76), 0.4075	
Other Sexual Minority	1.98 (0.50, 7.84), 0.3313	2.87 (0.45, 18.36), 0.2650	
Ethnicity			
Non-Aboriginal Whites	Ref (1.00)	Ref (1.00)	P < .0001
Aboriginal Persons	1.62 (0.51, 5.17), 0.4128	39.98 (4.76, 336.15), 0.0007	
Non-Aboriginal Persons of Colour	178.98 (13.68, >999.99), <.0001	>999.99 (339.75, >999.99), <.0001	
Newcomer Status			
In Canada for less than 5 years	Ref (1.00)	Ref (1.00)	P = 0.0758
In Canada for 5 or more years	0.44 (0.0, 4.04), 0.4663	0.05 (0.00, 0.69), 0.0248	
Frequency Read as Trans			
Never perceived as trans	Ref (1.00)	Ref (1.00)	P = 0.0588
Rarely or very rarely perceived as trans	2.52 (0.61, 10.38), 0.2005	1.09 (0.11, 11.05), 0.9417	
Sometimes/Half the time perceived as trans	3.17 (0.72, 13.94), 0.1260	0.33 (0.03, 3.85), 0.3732	
Often or frequently perceived as trans	2.28 (0.41, 12.58), 0.3451	8.22 (0.72, 93.51), 0.0895	
Medical Transition Status			
Not begun or not planning to transition	Ref (1.00)	Ref (1.00)	P = 0.4432
Transition in process	1.05 (0.36, 3.08), 0.9338	11.31 (0.85, 149.81), 0.0658	
Completed transition	1.20 (0.37, 3.86), 0.7605	7.44 (0.49, 113.10), 0.1485	
Social Transition Status			
None of the Time	Ref (1.00)	Ref (1.00)	P = 0.2537
Part-time	2.47 (0.44, 13.82), 0.3023	8.39 (0.50, 140.34), 0.1390	
Full-time	1.69 (0.35, 8.28), 0.5156	1.11 (0.06, 19.66), 0.9442	
Legal Marital Status (4 levels)			
Never Married	Ref (1.00)	Ref (1.00)	P = 0.0577
Separated, Divorced or Widowed	0.86 (0.21, 3.55), 0.8325	0.17 (0.02, 1.65), 0.1271	
Living Common-law	1.00 (0.32, 3.14), 0.9925	15.83 (1.08, 231.60), 0.0437	
Married	0.21 (0.04, 1.00), 0.0502	0.12 (0.01, 1.28), 0.0787	
High School Completion Status			
Did not complete high school	Ref (1.00)	Ref (1.00)	P = 0.0138
Did complete high school	1.96 (0.54, 7.08), 0.3036	>999.99 (9.12, >999.99), 0.0052	

Low Income /Poverty			
Below the Low Income Cut-off	Ref (1.00)	Ref (1.00)	P = 0.0131
Not Below the Low Income Cut-off	0.78 (0.32, 1.86), 0.5708	0.05 (0.01, 0.38), 0.0034	
Social Support			
Some of the time or less	Ref (1.00)	Ref (1.00)	P = 0.9558
Some to most of the time	0.75 (0.24, 2.40), 0.6320	0.58 (0.09, 3.93), 0.5794	
Most to all of the time	1.09 (0.37, 3.19), 0.8760	0.88 (0.10, 7.45), 0.9045	
Identity Support (dichotomized)			
Not at all to somewhat supportive	Ref (1.00)	Ref (1.00)	P = 0.0061
Somewhat to very supportive	1.02 (0.40, 2.60), 0.9734	0.03 (0.00, 0.30), 0.0022	

3.1.3 Regression Analyses: Self-Reported Transphobia

In bivariable models depicting associations with self-reported transphobia, age category, sexual orientation, ethnicity, immigration status, frequency read as trans, medical transition status, marital status, personal income, low-income status, and level of social support were all significantly associated with self-reported transphobia overall, while associations between self-reported transphobia and high school completion status and employment status approached significance.

In the multivariable model exploring associations with self-reported transphobia, immigration status was again excluded due to too small cell sizes. However, the 4-level education variable was used instead of the high school variable; both could not be used according to a SAS warning statement; and the odds ratios for the education variable was estimable in association with transphobia, so it was chosen for the greater amount of information it could provide versus the high school variable. Although they produced inestimable odds ratios in association with self-reported racism, here, both the employment and the frequency read as a POC variables could be used in association with self-reported transphobia.

In this model, age, gender spectrum, sexual orientation, marital status, social support and identity support were all significantly associated with reporting transphobia overall. Older individuals had slightly lower odds of reporting experiencing moderate (rather than low) levels of transphobia (OR = 0.94, CI = 0.90 – 0.99, p = 0.0102). MTFs were almost 7 times as likely as FTMs to report experiencing moderate rather than low levels of transphobia (OR = 6.75, CI = 2.58 – 17.67, p < 0.0001). Gay or lesbian individuals had greater odds of reporting high rather than low levels of transphobia (OR = 6.85, CI = 1.06 – 44.29, p = 0.0432). Those living full time in their felt gender had greater odds of reporting moderate rather than low levels of transphobia compared to those not living in their felt gender (OR = 6.57, CI = 1.04 – 41.28, p = 0.449). Individuals in common-law relationships also had greater odds of reporting moderate rather than low levels of transphobia compared to the unmarried (OR = 9.34, CI = 1.26 – 69.07, p = 0.0286). Those who had the social support of their networks most to all of the time had lower odds of reporting experiencing moderate versus low levels of transphobia compared to those with little to no social support (OR = 0.22, CI = 0.08 – 0.60, p = 0.0031), and a similar trend appeared in regards to identity support as those with more identity support had much lower odds of reporting either moderate or high levels of transphobia rather than low levels compared to those with less identity support. See tables below for more details about the magnitude and direction of the associations with self-reported transphobia.

Table 3.1.3a Bivariable Associations: Correlates of Self-Reported Transphobia among Trans Ontarians

Potential Correlate	Self-Reported Transphobia, Moderate (208) vs. Low (137)	Self-Reported Transphobia, High (54) vs. Low (137)	
	OR (95% C.I.), p-value	OR (95% C.I.), p-value	Overall p-value
Age	0.98 (0.95, 1.00), 0.0456	0.98 (0.93, 1.03), 0.3661	P = 0.1352
Age Category			
16-24	Ref (1.00)	Ref (1.00)	P < 0.0001
25-34	2.38 (1.09, 5.17), 0.0293	0.52 (0.17, 1.57), 0.2431	
35-44	1.18 (0.45, 3.10), 0.7370	0.37 (0.09, 1.47), 0.1588	
45-54	0.85 (0.25, 2.95), 0.7972	0.99 (0.19, 5.28), 0.9896	
55-64	0.19 (0.05, 0.67), 0.0100	0.58 (0.06, 5.92), 0.6472	
65+	0.11 (0.1, 0.81), 0.0302	0.04 (0.00, 0.49), 0.0094	
Youth Status			
16-24	Ref (1.00)	Ref (1.00)	P = 0.1949
25+	1.25 (0.64, 2.42), 0.5160	0.52 (0.19, 1.44), 0.2083	
Gender Spectrum			
FTM	Ref (1.00)	Ref (1.00)	P = 0.1489
MTF	1.80 (0.95, 3.42), 0.0734	2.14 (0.78, 5.88), 0.1398	
Sexual Orientation			
Straight/Heterosexual	Ref (1.00)	Ref (1.00)	P < 0.0001
Bisexual or Pansexual	2.84 (1.18, 6.86), 0.0201	1.50 (0.41, 5.49), 0.5403	
Gay or Lesbian	2.39 (0.79, 7.22), 0.1210	2.79 (0.60, 12.91), 0.1904	
Asexual	5.31 (0.58, 48.82), 0.1404	<0.001 (---, ---), <0.0001	
Other Sexual Minority	1.70 (0.68, 4.28), 0.2582	0.82 (0.14, 4.71), 0.8254	
Unsure or Questioning	1.82 (0.40, 8.31), 0.4400	<0.001 (---, ---), <0.0001	
Sexual Orientation (4 levels)			
Straight/Heterosexual	Ref (1.00)	Ref (1.00)	P = 0.2430
Bisexual or Pansexual	2.84 (1.18, 6.83), 0.0194	1.50 (0.41, 5.45), 0.5382	
Gay or Lesbian	2.39 (0.80, 7.17), 0.1190	2.79 (0.61, 12..80), 0.1881	
Other Sexual Minority	1.90 (0.78, 4.64), 0.1566	0.59 (0.11, 3.26), 0.5479	
Ethnicity			
Non-Aboriginal Whites	Ref (1.00)	Ref (1.00)	P = 0.0176
Aboriginal Persons	1.31 (0.43, 4.02), 0.6325	3.18 (0.75, 13.37), 0.1153	
Non-Aboriginal Persons of Colour	0.40 (0.17, 0.95), 0.0375	0.26 (0.08, 0.87), 0.0293	
Newcomer Status			
In Canada for less than 5 years	Ref (1.00)	Ref (1.00)	P = 0.2588
In Canada for 5 or more years	0.27 (0.06, 1.29), 0.1011	0.44 (0.07, 2.85), 0.3861	
Immigration Status			
Canadian Citizen	Ref (1.00)	Ref (1.00)	P = 0.0175
Permanent Resident	0.61 (0.13, 2.82), 0.5276	0.24 (0.02, 2.49), 0.2304	
In Canada on a Work, Student, or Visitor Visa	42.60 (4.29, 423.50), 0.0014	11.57 (0.66, 201.19), 0.0929	

Frequency Read as a Person of Colour (POC)			
Never perceived as a POC	Ref (1.00)	Ref (1.00)	P = 0.1881
Rarely or very rarely perceived as a POC	2.12 (0.73, 6.17), 0.1668	1.51 (0.52, 4.40), 0.4467	
Sometimes/Half the time perceived as a POC	0.47 (0.13, 1.66), 0.2378	2.07 (0.26, 16.74), 0.4944	
Often or frequently perceived as a POC	0.72 (0.26, 1.97), 0.5228	0.30 (0.08, 1.17), 0.0819	
Frequency Read as Trans			
Never perceived as trans	Ref (1.00)	Ref (1.00)	P = 0.0049
Rarely or very rarely perceived as trans	4.11 (1.58, 10.72), 0.0038	3.30 (0.53, 20.42), 0.1991	
Sometimes/Half the time perceived as trans	2.18 (0.87, 5.45), 0.0962	1.43 (0.26, 7.80), 0.6801	
Often or frequently perceived as trans	1.88 (0.57, 6.24), 0.3022	7.59 (1.10, 52.27), 0.0396	
Medical Transition Status			
Not begun or not planning to transition	Ref (1.00)	Ref (1.00)	P = 0.0076
Transition in process	2.91 (1.23, 6.86), 0.0148	6.51 (1.81, 23.45), 0.0042	
Completed transition	2.87 (1.29, 6.41), 0.0101	2.53 (0.61, 10.42), 0.1999	
Social Transition Status			
None of the Time	Ref (1.00)	Ref (1.00)	P = 0.3626
Part-time	0.90 (0.31, 2.62), 0.8437	0.46 (0.07, 3.11), 0.4219	
Full-time	1.66 (0.65, 4.25), 0.2900	1.58 (0.34, 7.33), 0.5572	
Legal Marital Status (4 levels)			
Never Married	Ref (1.00)	Ref (1.00)	P = 0.0003
Separated, Divorced or Widowed	0.64 (0.25, 1.68), 0.3686	0.96 (0.24, 3.82), 0.9578	
Living Common-law	2.41 (0.81, 7.15), 0.1121	3.59 (0.67, 19.12), 0.1342	
Married	0.40 (0.15, 1.03), 0.0585	0.05 (0.01, 0.22), < 0.0001	
Legal Marital Status (3 levels)			
Never Married	Ref (1.00)	Ref (1.00)	P = 0.8346
Separated, Divorced or Widowed	0.64 (0.25, 1.68), 0.3674	0.96 (0.24, 3.81), 0.9577	
Married or Living Common-law	0.76 (0.34, 1.72), 0.5125	0.69 (0.16, 3.09), 0.6295	
Education			
Non-completion of High School	Ref (1.00)	Ref (1.00)	P = 0.2769
Graduation from High School	0.70 (0.19, 2.61), 0.5918	0.23 (0.04, 1.45), 0.1170	
Some Postsecondary School	1.14 (0.33, 4.00), 0.8347	0.34 (0.08, 1.47), 0.1485	
Postsecondary Graduation	1.04 (0.35, 3.05), 0.9471	0.20 (0.05, 0.82), 0.0252	
High School Completion Status			
Did not complete high school	Ref (1.00)	Ref (1.00)	P = 0.0630
Did complete high school	1.00 (0.34, 2.89), 0.9940	0.24 (0.07, 0.87), 0.0296	
Employment (6 levels)			
Unemployed	Ref (1.00)	Ref (1.00)	P = 0.0646
Employed Part-time	0.52 (0.13, 2.02), 0.3459	0.17 (0.04, 0.81), 0.0256	
Self-employed Part-time	2.07 (0.40, 10.72), 0.3865	0.58 (0.08, 4.36), 0.5951	
Employed Full-time	0.43 (0.12, 1.50), 0.1863	0.47 (0.10, 2.20), 0.3389	
Self-employed Full-time	0.32 (0.04, 2.78), 0.3010	1.17 (0.13, 10.84), 0.8934	
Other (Student, Retired, or on Disability)	0.88 (0.24, 3.27), 0.8580	0.63 (0.12, 3.17), 0.5726	
Employment (4 levels)			
Unemployed	Ref (1.00)	Ref (1.00)	P = 0.0507
Employed Part-time (incl. self employment)	0.71 (0.19, 2.57), 0.5964	0.22 (0.05, 0.99), 0.0483	
Employed Full-time (incl. self employment)	0.42 (0.12, 1.43), 0.1632	0.56 (0.13, 2.47), 0.4450	
Other (Student, Retired, or on Disability)	0.88 (0.24, 3.25), 0.8573	0.63 (0.13, 3.25), 0.5706	

Personal Income (pseudo-continuous)	0.92 (0.78, 1.07), 0.2772	0.83 (0.68, 1.01), 0.0600	P = 0.1688
Personal Income			
Less than $5000	Ref (1.00)	Ref (1.00)	P = 0.0014
$5000 – Less than $15,000	5.37 (1.69, 71.06), 0.0044	8.15 (1.86, 35.73), 0.0054	
$15,000 – less than $30,000	3.40 (1.04, 11.11), 0.0423	2.34 (0.49, 11.32), 0.2898	
$30,000 – less than $50,000	0.59 (0.18, 1.95), 0.3851	1.61 (0.25, 10.32), 0.6176	
$50,000 – less than $80,000	1.54 (0.35, 6.71), 0.5684	0.87 (0.15, 5.21), 0.8781	
$80,000 or more	1.16 (0.259 5.28), 0.8531	0.31 (0.04, 2.43), 0.2667	
Low Income /Poverty			
Below the Low Income Cut-off	Ref (1.00)	Ref (1.00)	P = 0.0368
Not Below the Low Income Cut-off	0.48 (0.23, 1.00), 0.0493	0.28 (0.10, 0.81), 0.0191	
Social Support			
Some of the time or less	Ref (1.00)	Ref (1.00)	P = 0.0005
Some to most of the time	1.45 (0.58, 3.53), 0.4324	1.20 (0.36, 4.02), 0.7665	
Most to all of the time	0.31 (0.14, 0.65), 0.0022	0.19 (0.05, 0.75), 0.0183	
Identity Support			
Not at all or not very supportive	Ref (1.00)	Ref (1.00)	P = 0.1829
Not very to somewhat supportive	3.24 (0.65, 16.22), 0.1533	2.65 (0.28, 25.16), 0.3970	
Somewhat to very supportive	1.23 (0.31, 4.93), 0.7743	0.77 (0.09, 6.54), 0.8108	
Identity Support (dichotomized)			
Not at all to somewhat supportive	Ref (1.00)	Ref (1.00)	P = 0.1345
Somewhat to very supportive	0.52 (0.25, 1.07), 0.0754	0.38 (0.13, 1.14), 0.0846	

Table 3.1.3b Multivariable Associations: Correlates of Self-Reported Transphobia among Trans Ontarians

Potential Correlate (n)	Self-Reported Transphobia, Moderate (172) vs. Low (109)	Self-Reported Transphobia, High (44) vs. Low (109)	
	OR (95% C.I.), p-value	OR (95% C.I.), p-value	Overall p-value
Age	0.94 (0.90, 0.99), 0.0102	0.96 (0.90, 1.02), 0.2190	P = 0.0367
Gender Spectrum			
FTM	Ref (1.00)	Ref (1.00)	P = 0.0002
MTF	6.75 (2.58, 17.67), <0.0001	1.68 (0.46, 6.12), 0.4310	
Sexual Orientation (4 levels)			
Straight/Heterosexual	Ref (1.00)	Ref (1.00)	P = 0.0303
Bisexual or Pansexual	2.05 (0.42, 9.97), 0.3731	2.10 (0.38, 11.73), 0.3995	
Gay or Lesbian	2.10 (0.47, 9.50), 0.3338	6.85 (1.06, 44.29), 0.0432	
Other Sexual Minority	3.21 (0.76, 13.50), 0.1112	0.73 (0.12, 4.55), 0.7343	
Ethnicity			
Non-Aboriginal Whites	Ref (1.00)	Ref (1.00)	P = 0.1425
Aboriginal Persons	1.02 (0.11, 9.75), 0.9874	5.26 (0.57, 48.40), 0.1427	
Non-Aboriginal Persons of Colour	0.27 (0.03, 2.17), 0.2191	0.67 (0.05, 9.77), 0.7694	
Newcomer Status			
In Canada for less than 5 years	Ref (1.00)	Ref (1.00)	P = 0.8053
In Canada for 5 or more years	1.21 (0.11 13.19), 0.8738	0.52 (0.02, 15.79), 0.7055	
Frequency Read as a Person of Colour (POC)			
Never perceived as a POC	Ref (1.00)	Ref (1.00)	P = 0.1353
Rarely or Very Rarely perceived as a POC	1.25 (0.16, 9.50), 0.8303	2.03 (0.25, 16.64), 0.5095	
Sometimes/Half the Time perceived as a POC	0.24 (0.03, 2.10), 0.1951	3.69 (0.25, 54.99), 0.3430	
Often or frequently Perceived as a POC	0.69 (0.08, 6.36), 0.7429	0.47 (0.03, 8.31), 0.6087	
Frequency Read as Trans			
Never Perceived as Trans	Ref (1.00)	Ref (1.00)	P = 0.1501
Rarely or Very Rarely Perceived as Trans	2.95 (0.92, 9.53), 0.0699	14.69 (0.67, 320.39), 0.0875	
Sometimes/Half the Time Perceived as Trans	1.12 (0.36, 3.51), 0.8491	6.55 (0.28, 157.00), 0.2395	
Often or frequently Perceived as Trans	0.55 (0.12, 2.62), 0.4530	8.78 (0.48, 162.42), 0.1445	
Medical Transition Status			
Not begun or not planning to transition	Ref (1.00)	Ref (1.00)	P = 0.1699
Transition in process	1.42 (0.37, 5.48), 0.6078	4.45 (0.88, 22.50), 0.0707	
Completed transition	2.51 (0.60, 10.44), 0.2061	2.62 (0.38, 17.95), 0.3270	
Social Transition Status			
None of the Time	Ref (1.00)	Ref (1.00)	P = 0.1531
Part-time	2.90 (0.49, 17.17), 0.2403	1.17 (0.10, 13.50), 0.9000	
Full-time	6.57 (1.04, 41.28), 0.0449	5.26 (0.43, 64.13), 0.1934	
Legal Marital Status (4 levels)			
Never Married	Ref (1.00)	Ref (1.00)	P = 0.0373
Separated, Divorced or Widowed	0.36 (0.09, 1.52), 0.1653	0.40 (0.07, 2.38), 0.3120	
Living Common-law	9.34 (1.26, 69.07), 0.0286	3.45 (0.42, 28.45), 0.2493	

Married	1.50 (0.40, 5.67), 0.5465	0.05 (0.00, 1.32), 0.0731	
Education			
Non-completion of High School	Ref (1.00)	Ref (1.00)	P = 0.9116
Graduation from High School	0.57 (0.10, 3.36), 0.5381	0.36 (0.05, 2.60), 0.3137	
Some Postsecondary School	0.86 (0.17, 4.24), 0.8484	0.59 (0.08, 4.16), 0.5978	
Postsecondary Graduation	1.18 (0.25, 5.63), 0.8395	0.47 (0.07, 3.31), 0.4501	
Employment (4 levels)			
Unemployed	Ref (1.00)	Ref (1.00)	P = 0.1893
Employed Part-time (incl. self-employed)	1.07 (0.26, 4.35), 0.9299	0.86 (0.10, 7.60), 0.8449	
Employed Full-time (incl. self-employed)	0.46 (0.10, 2.22), 0.3320	2.52 (0.27, 23.54), 0.4167	
Other (Student, Retired, or on Disability)	0.73 (0.16, 3.83), 0.6850	0.36 (0.04, 3.41), 0.3700	
Low Income /Poverty			
Below the Low Income Cut-off	Ref (1.00)	Ref (1.00)	P = 0.6307
Not Below the Low Income Cut-off	0.93 (0.29, 2.98), 0.9038	0.53 (0.12, 2.41), 0.4076	
Social Support			
Some of the time or less	Ref (1.00)	Ref (1.00)	P = 0.0037
Some to most of the time	1.39 (0.47, 4.11), 0.5473	2.70 (0.68, 10.73), 0.1585	
Most to all of the time	0.22 (0.08, 0.60), 0.0031	0.52 (0.11, 2.43), 0.4045	
Identity Support (dichotomized)			
Not at all to somewhat supportive	Ref (1.00)	Ref (1.00)	P = 0.0019
Somewhat to very supportive	0.15 (0.05, 0.48), 0.0011	0.06 (0.01, 0.36), 0.0018	

3.2 Self-Reported Racism, Transphobia and Past-Year HIV-Related Sexual Risk Behaviour

3.2.1 Prevalence of Past-year HIV-Related Sexual Risk Behaviour

Tables 3.2.1a and 3.2.1b below show the prevalence of self-reported HIV-related sexual risk behaviour disaggregated by ethnicity and by gender spectrum. Among our trans participants, 36.5% (29.2% - 46.1%) reported not engaging in sexual intercourse in the past year, while 51.1% (41.7% – 59.0%) reported engaging in negligible or low risk sex, and 12.0% (6.7% - 18.2%) reported engaging in high risk sex by our definitions.

Table 3.2.1a Prevalence of Past-Year HIV-Related Sexual Risk Behaviour Disaggregated by Ethnicity

		Overall % (95% CI) (n=404)	**Non-Ab. White % (95% CI) (n =313)**	**Aboriginal % (95% CI) (n =32)**	**Non-Aboriginal Persons of Colour % (95% CI) (n =57)**
Level of risk of past-year HIV-related sexual risk behaviour	None	36.5 (29.2, 46.1)	38.4 (31.2, 49.8)	35.4 (13.4, 60.2)	19.0 (5.7, 36.1)
	Low	51.1 (41.7, 59.0)	47.7 (37.9, 56.9)	60.4 (34.3, 83.4)	76.4 (58.5, 89.9)
	High	12.0 (6.7, 18.2)	13.9 (6.6, 19.2)	4.2 (0.0, 13.4)	4.6 (1.0, 10.8)

Table 3.2.1b Prevalence of Past-year HIV-Related Sexual Risk Behaviour Disaggregated by Gender Spectrum

		Female-to-Male Spectrum % (95% CI) (n =209)	**Male-to-Female Spectrum % (95% CI) (n =195)**
Level of risk of past-year HIV-related sexual risk behaviour	None	24.8 (15.6, 36.3)	50.3 (39.0, 63.0)
	Low	68.5 (56.5, 78.6)	30.6 (20.0, 40.6)
	High	6.7 (1.1, 13.9)	19.1 (9.8, 29.9)

Using the method of variance recovery (MOVER)[103], we constructed confidence intervals around the difference in these proportions in order to determine whether or not sexual risk behaviour was significantly different across the racial/ethnic groups, or for FTMs compared to MTFs. Comparing non-Aboriginal Whites to Aboriginals, we found that there was no significant difference in the proportion that reported not having had sex in the past year (CI_{diff}: -22.82, 27.78), however, a significantly greater proportion of Aboriginals reported low risk sex compared to non-Aboriginal Whites (CI_{diff}: 12.30, 14.97), and a significantly lower proportion of Aboriginals reported engaging in high risk sex compared to non-Aboriginal Whites (CI_{diff}: 2.04, 16.46). Comparing non-Aboriginal Whites to non-Aboriginal Persons of Colour, we found that a significantly greater proportion of non-Aboriginal Whites reported not having sex in the past year compared to non-Aboriginal POCs (CI_{diff}: 0.85, 36.92). A significantly greater proportion of non-Aboriginal Whites also reported high risk sex compared to non-Aboriginal POCs (CI_{diff}: 0.28, 15.87). A significantly greater proportion of non-Aboriginal POCs reported having had low risk sex compared to non-Aboriginal White persons (CI_{diff}: -45.58, -8.77). Finally, in a comparison of Aboriginals to non-Aboriginal POCs, we found that there were no significant differences in the proportions that reported no past-year sex (CI_{diff}: -11.46, 44.54), or low risk sex (CI_{diff}: -45.38, 13.14), or high risk sex (CI_{diff}: -56.48, 9.48). In a comparison of MTFs and FTMs, we found that a significantly greater proportion of MTFs reported not having had sex in the past year (CI_{diff}: -41.18, -9.38), while a significantly greater proportion reported having had high risks sex compared to FTMs (CI_{diff}: -24.57, -0.64). Finally, a significantly greater proportion of FTMs reported engaging in low risk sex compared to MTFs (CI_{diff}: 22.28, 23.26).

3.2.2 Self-Reported Racism, Transphobia and their Intersection as Predictors of Past-year HIV-Related Sexual Risk Behaviour

In accordance with the second thesis objective, we explored whether or not self-reported racism, transphobia or the two interacting, predicted reporting of past-year HIV-related sexual risk behaviour. Our primary model included the scaled racism variable, the scaled transphobia variable, and their intersection as represented by an interaction term as the explanatory variables and the past-year HIV-related sexual risk behaviour composite variable as the dependent variable. Recall that the dependent variable, self-reported HIV-related sexual risk behaviour, was categorical with three levels. The second level, low sex risk behaviour, was used as the referent, and was thus compared to the odds of no sex in each model and independently to the odds of high risk sex in each model. Results of the logistic regression analysis carried out using SAS software are detailed below.

Table 3.2.2a Self-Reported Racism, Transphobia, and their Intersection as Predictors of Past-year HIV-Related Sexual Risk Behaviour – Full Sample Model, N=393

	Maximum Likelihood Estimate	Standard Error	Wald Chi-Square	p-value	OR (95% CI)
Overall Analysis of Effects					
Self-Reported Racism	---	---	3.3078	0.1913	---
Self-Reported Transphobia	---	---	0.7771	0.6780	---
Self-Reported Racism* Transphobia	---	---	2.2290	0.3281	---
No Sex vs. Low Risk Sex					
Intercept	-0.4727	0.4601	1.0558	0.3042	0.62 (0.25, 1.54)
Self-Reported Racism	-0.0576	0.0890	0.4189	0.5175	0.94 (0.79, 1.12)
Self-Reported Transphobia	0.0234	0.0301	0.6073	0.4358	1.02 (0.97, 1.09)
Self-Reported Racism* Transphobia	-0.00081	0.00450	0.0324	0.8572	1.00 (0.99, 1.01)
High vs. Low Risk Sex					
Intercept	-1.6257	0.6362	6.5296	0.0106	0.20 (0.06, 0.68)
Self-Reported Racism	-0.2522	0.1409	3.2055	0.0734	0.78 (0.59, 1.02)
Self-Reported Transphobia	0.0224	0.0398	0.3179	0.5729	1.02 (0.95, 2.73)
Self-Reported Racism* Transphobia	0.00837	0.00599	1.9507	0.1625	1.01 (1.00, 1.02)

In the above full sample model, self-reported racism and transphobia did not interact to determine self-reported HIV-related sexual risk behaviour for trans Ontarians.

We then explored whether or not self-reported racism and self-reported transphobia were associated with past-year HIV-related sexual risk behaviour without the specification of an interaction between them, i.e. we examined the main effects of self-reported racism and self-reported transphobia on past-year HIV-related sexual risk behaviour. Self-reported racism was significantly, although barely so, associated with past-year HIV-related sexual risk behaviour ($p = 0.0499$) comparing high risk sex to negligible or low risk sex, such that, those who reported experiencing higher levels of racism (adjusted for self-reported transphobia) had lower odds of engaging in high risk sex versus low risk sex (OR = 0.94, CI = 0.88 – 1.00). Increased self-reported racism (adjusted for self-reported transphobia) was also associated with lower odds of reporting not having sex (OR = 0.93 CI = 0.86 – 1.01), though this association only approached significance ($p = 0.0832$). We found no significant association between self-reported transphobia and past-year HIV-related sexual risk behaviour in this model (results not shown). When self-reported racism alone was modeled, without adjusting for self-reported transphobia, the association was not found to be significant. When self-reported transphobia was modeled alone, without including self-reported racism in the model, the association was not found to be significant.

A third set of models utilizing the quadratic forms of the self-reported racism and self-reported transphobia variables also revealed no significant associations between either self-reported racism or self-reported transphobia and past-year HIV-related sexual risk behaviour. The quadratic variables were used to determine if a curvilinear relationship existed between self-reported racism, self-reported transphobia and past-year HIV-related sexual risk behaviour. The more traditional logit model assumes that a linear relationship exists between variables, and this assumption needed to be relaxed in order to fully explore the relationship between self-reported racism, self-reported transphobia and past-year HIV-related sexual risk behaviour.

We then performed several domain analyses looking at self-reported racism, self-reported transphobia, and their interaction, stratified by our potential moderators, including youth status, gender spectrum, ethnicity, sexual orientation, medical transition status, social support, identity support, and low income status. Specifically, we determined whether self-reported racism, self-reported transphobia, or their intersection impacted sexual risk behaviour among youth under 25 versus adults older than 25; among FTMs versus MTFs; among non-Aboriginal Whites versus Aboriginals or Non-Aboriginal Persons of Colour; among those who were bisexual or pansexual, lesbian or gay, straight, or of some other sexual orientation; among those who had

completed their transition, were in the process of transitioning, or had not begun or were not planning to medically transition; among those at different levels of social support; different levels of identity support; and finally among those above and below the low-income cut-off.

3.2.3 Domain Analyses

As with the full sample model, we fully explored the impact of self-reported racism and self-reported transphobia on past-year HIV-related sexual risk behaviour among the different domains. We examined: i) a model that included self-reported racism, self-reported transphobia and the interaction between them; ii) one with self-reported racism and self-reported transphobia without an interaction term; iii) one with just self-reported racism, independent of self-reported transphobia; and iv) another that included only self-reported transphobia, independent of self-reported racism, as the predictor variable. In general, self-reported racism and self-reported transphobia's impact on past-year HIV-related sexual risk behaviour did differ by the different domains. Some consideration was given to correcting for multiple testing, however, because of the exploratory nature of these analyses, results are presented without the application of any such correction. Therefore, as with any statistical test at alpha=0.05, there remains a 1 in 20 probability that statistically significant results may be due to chance alone.

Table 3.2.3a Summary Table – Racism and Transphobia as Predictors of Past-Year HIV-related Sex Risk Behaviour among Trans Ontarians within Different Domains – Odds of High Risk Sex in the Past Year

	Youth Status		Gender Spectrum		Ethnicity			Sexual Orientation				Medical Transition Status			Social Support			Identity Support		LICO	
Effect† by:	Youth	Adult	FTM	MTF	White	Aboriginal	POC	Straight	Bi- ,Pansexual	Gay, Lesbian	Other	Completed	In Process	Not Begun	Some or Less	Some - Most	Most - All	Lower	Higher	Below	Above
Model 1																					
Self-reported racism	n/a	n/a	n/a	n/a	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Self-reported transphobia	n/a	n/a	n/a	n/a	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Self-reported racism* transphobia	No	No	No	No	No	No	+	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Model 2																					
Self-reported racism	No	No	No	No	No	No	n/a	No	No	No	No	No	No	-	No	No	No	No	No	No	No
Self-reported transphobia	+	No	No	No	No	No	n/a	No	+	No	No	+	No	No	No	No	No	No	No	No	No
Model 3																					
Self-reported racism	No	No	No	No	No	No	+	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Model 4																					
Self-reported transphobia	No	No	No	No	No	No	+	No	+	No	No	+	No	No	No	No	No	No	No	No	No

†Refers to significance at an alpha of 0.05. Table depicts impact of racism, transphobia and their interaction on sexual risk behaviour within different groups, and indicates the direction of effect, where one exists, with a "+" for positive associations, or a "–" for negative associations.

Table 3.2.3b Summary Table – Racism and Transphobia as Predictors of Past-Year HIV-related Sex Risk Behaviour among Trans Ontarians within Different Domains – Odds of No Sex in the Past Year

	Youth Status		Gender Spectrum		Ethnicity			Sexual Orientation				Medical Transition Status			Social Support			Identity Support		LICO	
Effect† by:	Youth	Adult	FTM	MTF	White	Aboriginal	POC	Straight	Bi- ,Pansexual	Gay, Lesbian	Other	Completed	In Process	Not Begun	Some or Less	Some - Most	Most - All	Lower	Higher	Below	Above
Model 1																					
Self-reported racism	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Self-reported transphobia	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Self-reported racism* transphobia	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Model 2																					
Self-reported racism	No	No	No	No	No	No	No	No	No	No	-	No	No	No	No	-	No	No	-	No	-
Self-reported transphobia	No	No	No	No	No	-	No	No	No	No	No	No	No	+	No	No	No	No	No	No	No
Model 3																					
Self-reported racism	No	No	No	No	No	No	No	No	No	No	-	No	No	No	No	-	No	No	-	No	-
Model 4																					
Self-reported transphobia	No	No	No	No	No	-	No	No	No	No	No	No	-	No	No	No	No	No	No	No	No

†Refers to significance at an alpha of 0.05. Table depicts impact of racism, transphobia and their interaction on sexual risk behaviour within different groups, and indicates the direction of effect, where one exists, with a "+" for positive associations, or a "–" for negative associations.

Youth Status

We found no interaction between self-reported racism and self-reported transphobia in determining past-year HIV-related sexual risk behaviour among youth (p=0.4363). Among the adults, the interaction term was also not significant overall (p= 0.1970), but did approach significance (OR = 1.01, CI =1.00 – 1.03, p = 0.0732) when contrasting the odds of engaging in high risk versus low risk sex, suggesting that the impact of self-reported racism on past-year HIV-related sexual risk behaviour may differ slightly at different levels of self-reported transphobia, or vice versa, that the impact of self-reported transphobia on past-year HIV-related sexual risk behaviour may differ slightly at different levels of self-reported racism. Self-reported racism, setting self-reported transphobia at zero, was significantly associated with the odds of engaging in high risk sex, as those who reported experiencing more racism had lower odds of having high risk sex compared to low risk sex (OR = 0.74, CI = 0.55 – 0.99, p = 0.0458). Associations within this group should be taken with a grain of salt, however, as the "adult" group included individuals ranging in age from 25 to 77, and we did not determine here whether or not increasing age played a confounding role in the association between self-reported racism and past-year HIV-related sexual risk behaviour. In addition, the interaction term only approached significance.

Further examination using a model that excluded the interaction term showed that among adults, neither self-reported racism nor self-reported transphobia were found to be significantly associated with past-year HIV-related sexual risk behaviour in this model. However, we did find a significant association between self-reported transphobia and past-year HIV-related sexual risk behaviour among youth under 24 years old (OR = 1.14, CI = 1.00 – 1.20, p = 0.0476), such that, controlling for self-reported racism, youth experiencing higher levels of self-reported transphobia had greater odds of reporting engaging in high risk sex behaviour versus low risk sex behaviour (see table below). However, the association between self-reported transphobia and past-year HIV-related sexual risk behaviour (p = 0.1359) was not significant overall, nor when comparing the odds of no sex to the odds of low risk sex (p = 0.6013).

Table 3.2.3c Self-Reported Transphobia as a Predictor of Self-Reported Past-Year HIV-Related Sex Risk among Youth, N=113

	Maximum Likelihood Estimate	Standard Error	Wald Chi-Square	p-value	OR (95% CI)
Overall Analysis of Effects					
Self-reported racism	---	---	3.3780	0.1847	---
Self-reported transphobia	---	---	3.9918	0.1359	---
No Sex vs. Low Risk Sex					
Intercept	-0.6265	0.6340	0.9763	0.3231	0.53 (0.15, 1.85)
Self-reported racism	-0.0738	0.0466	2.5079	0.1133	0.93 (0.85, 1.02)
Self-reported transphobia	0.0230	0.0440	0.2731	0.6013	1.02 (0.94, 1.12)
High vs. Low Risk Sex					
Intercept	-3.7154	1.1752	9.9959	0.0016	0.02 (0.00, 0.24
Self-reported racism	-0.1600	0.1315	1.4812	0.2236	0.85 (0.66, 1.10)
Self-reported transphobia	0.1302	0.0657	3.9252	0.0476	1.14 (1.00, 1.20)

In unadjusted models, we found no significant relationship between self-reported racism and past-year HIV-related sexual risk behaviour, unadjusted by self-reported transphobia, for either youth or adults. However among youth, the relationship between self-reported transphobia and past-year HIV-related sexual risk behaviour in a model unadjusted by self-reported racism did approach significance (p = 0.0871) when contrasting high versus low risk sex. This association was in positive direction, i.e. as the experience of self-reported transphobia increased so did the odds of reporting engaging in high risk sex rather than low risk sex (OR = 1.11, CI = 0.99 – 1.24). Among adults, self-reported transphobia, unadjusted by self-reported racism, was not found to be significantly associated with past-year HIV-related sexual risk behaviour (p = 0.6431).

Gender Spectrum

Stratified by gender spectrum, we found no significant interaction between self-reported racism and self-reported transphobia in determining past-year HIV-related sexual risk behaviour either among FTMs or MTFs (overall p = 0.4774 and 0.5078 respectively). Similarly, we found no association between either self-reported racism or self-reported transphobia and HIV-related sex risk in a model that excluded the interaction term for either FTMs or MTFs. For FTMs, the overall p-value for self-reported racism was 0.1714, and for self-reported transphobia was 0.6714. For MTFs, the overall p-value for self-reported racism was 0.2983, and for self-reported transphobia was 0.6530. Additionally, we found no significant relationship between self-reported racism and

past-year HIV-related sexual risk behaviour in a model unadjusted by self-reported transphobia for either FTMs (overall p = 0.1995) or MTFs (overall p = 0.2095); nor was there found a significant relationship between self-reported transphobia and past-year HIV-related sexual risk behaviour in a model unadjusted by self-reported racism for either FTMs (overall p = 0.7144) or MTFs (overall p = 0.3519).

Ethnicity

When stratified by ethnicity, a significant association was found between past-year HIV-related sexual risk behaviour and the interaction of self-reported racism and self-reported transphobia among those who were categorized as Non-Aboriginal Persons of Colour, but not among non-Aboriginal Whites nor among Aboriginals. This association was significant overall (p = 0.0209), and was significant when comparing the odds of reporting high risk sex and low risk sex (OR = 1.02, CI = 1.00 – 1.03, p = 0.0287), constituting a 2% increase in excess risk of high risk sex with a one unit increase in self-reported racism by self-reported transphobia.

Table 3.2.3d Logistic Regression Model of Self-Reported Racism, Self-Reported Transphobia, and their Intersection as Predictors of Self-Reported Past-Year HIV-Related Sex Risk Behaviour among Non-Aboriginal Persons of Colour, N=57

	Maximum Likelihood Estimate	Standard Error	Wald Chi-Square	p-value	OR (95% CI)
Overall Analysis of Effects					
Self-reported racism	---	---	3.6675	0.1598	---
Self-reported transphobia	---	---	0.1189	0.9423	---
Self-reported racism* Self-reported transphobia	---	---	7.7329	0.0209	---
No Sex vs. Low Risk Sex					
Intercept	-1.4656	2.0928	0.4904	0.4837	0.23 (0.00, 13.96)
Self-reported racism	0.3556	0.3075	1.3375	0.2475	1.43 (0.78, 2.61)
Self-reported transphobia	0.0223	0.2074	0.0116	0.9143	1.02 (0.68, 1.54)
Self-reported racism* Self-reported transphobia	-0.0433	0.0298	2.1056	0.1468	0.96 (0.90, 1.02)
High vs. Low Risk Sex					
Intercept	-2.9786	1.4326	4.3231	0.0376	0.05 (0.00, 0.84)
Self-reported racism	-0.2064	0.1503	1.8871	0.1695	0.82 (0.61, 1.09)
Self-reported transphobia	-0.0314	0.1051	0.0890	0.7654	0.97 (0.79, 1.19)
Self-reported racism* Self-reported transphobia	0.0179	0.00819	4.7884	0.0287	1.02 (1.00, 1.03)

This finding of a significant interaction means that the effect of transphobia on the odds of high risk sex will differ at different levels of racism, or vice versa, that the effect of racism on the odds of high risk sex will differ at different levels of transphobia for a non-Aboriginal POC. The effect of a 5-unit increase in racism at different levels of transphobia, and a 5-unit increase in transphobia at different levels of racism are described below. The racism scores ranged from 0 – 30 (with a possible max of 30), while transphobia scores ranged from 0 – 31 (with a possible max of 33). The impact on HIV-related sexual risk behaviour is demonstrated at the minimum, the mean, and the maximum levels of each of the racism and transphobia variables.

Table 3.2.3.dii The Shift in Odds of Engagement in High (vs. Low) Risk Sex as Racism or Transphobia Vary

	Reported Racism = 0	Reported Racism = 3	Reported Racism = 30
Odds of high risk sex with a 5-unit increase in self-reported transphobia.	0.85	1.12*	12.53
	Reported Transphobia = 0	Reported Transphobia= 14.5	Reported Transphobia = 31
Odds of high risk sex with a 5-unit increase in self-reported racism.	0.36	1.30	5.71

*Sample calculation for odds of high risk sex (rather than low risk sex) when racism = 3 for a 5-unit increase in transphobia:

exp [5(beta transphobia) + (3)(5)(beta racism*transphobia)] = exp[5(-0.0314) + (3)(5)(0.0179)] = 1.12

In a model that excluded the interaction term, we saw that among Whites, self-reported racism's impact on past-year HIV-related sexual risk behaviour approached significance (p = 0.0660) when contrasting the odds of reporting engaging in high risk sex rather than low risk sex. Those who reported experiencing more racism (adjusted for self-reported transphobia) had lower odds of reporting engaging in high risk sex rather than low risk sex (OR = 0.89, CI = 0.79 – 1.01). Among Aboriginals, those reporting experiencing greater amounts of transphobia had significantly lower odds of not engaging in sex versus low risk sex (OR = 0.82, CI = 0.68 – 0.98, p = 0.0305) adjusted for self-reported racism.

In a model unadjusted by self-reported transphobia, self-reported racism's impact on past-year HIV-related sexual risk behaviour among White persons' approached significance (p = 0.0936). In this association, those reporting experiencing more racism had decreased odds of reporting engaging in high risk sex compared to low risk sex (OR = 0.90, CI = 0.80 – 1.02). The relationship between self-reported racism and high risk sex was also significant among non-Aboriginal POCs (p=0.0052), but in the reverse direction, such that those reporting experiencing more racism had greater odds of reporting engaging in high risk sex rather than low risk sex (OR = 1.20, CI = 1.06 – 1.37). We detected no significant impact of self-reported racism on either odds of reporting high risk sex or odds of non-engagement in sex among Aboriginal persons (results not shown).

In a model that included only self-reported transphobia as the independent variable, we noted no association between self-reported transphobia and sex risk for Non-Aboriginal White persons. However, self-reported transphobia (unadjusted by self-reported racism) did show a significant association with past-year HIV-related sexual risk behaviour among Aboriginals, such that those with higher levels of self-reported transphobia had greater odds of reporting engaging in low risk sex rather than not having any sex (OR = 0.81, CI = 0.70 – 0.95, p = 0.0076). Self-reported transphobia was not found to impact upon odds of engaging in high risk sex among Aboriginal persons. However, the association between self-reported transphobia (unadjusted by self-reported racism) and past-year HIV-related sexual risk behaviour was significant among non-Aboriginal POCs (p = 0.0184), with those reporting experiencing more transphobia having greater odds of reporting high risk sex behaviour (OR = 1.25 CI = 1.04 – 1.50). For non-Aboriginal POCs, self-reported transphobia (unadjusted for self-reported racism) approached significance (p = 0.0787) comparing the odds of reporting non-engagement in sex to the odds of having low risk sex. Those with greater experiences of self-reported transphobia had lower odds of reporting not having sex (OR = 0.81, CI = 0.64 – 1.03).

Sexual Orientation

There was no evidence of an interaction between self-reported racism and self-reported transphobia in predicting past-year HIV-related sexual risk behaviour among bisexual and pansexual persons. We also found no significant associations between self-reported racism, self-reported transphobia, or their interaction and past-year HIV-related sexual risk behaviour for gay and lesbian persons, for straight/heterosexual persons, nor for those in the other sexual minority group.

In the model that excluded the interaction term, self-reported transphobia (adjusted for self-reported racism) was significantly associated with the odds of high risk sex among bisexual and pansexual persons, such that those reporting more transphobia had greater odds of engaging in high risk rather than low risk sex (OR = 1.09, CI = 1.02 – 1.17, p = 0.0088). We found no significant associations between self-reported racism, self-reported transphobia and past-year HIV-related sexual risk behaviour for gay and lesbian persons, nor for straight/heterosexual persons in this model. However, among those classified as "other sexual minorities", self-reported racism (adjusted for self-reported transphobia) impacted odds of reporting having no sex; whereby those with more self-reported racism having lower odds of reporting not having sex rather than having low risk sex (OR = 0.86, CI = 0.75 – 0.99, p = 0.0406).

In unadjusted models, self-reported racism was significantly associated with the odds of not having sex among those classified as "other sexual minorities"; specifically, those with more self-reported racism had lower odds of reporting non-engagement in sex (OR = 0.87, CI = 0.76 – 0.99, p = 0.0410). Among bisexual and pansexual persons, self-reported transphobia, unadjusted for self-reported racism, significantly impacted the odds of reporting high risk sex; specifically bisexual or pansexual persons with more self-reported transphobia had greater odds of reporting engaging in high rather than low risk sex (OR = 1.10, CI = 1.02 – 1.18, p = 0.0126). Self-reported transphobia was not found to play a significant role in predicting past-year HIV-related sexual risk behaviour among gay and lesbian persons, straight/heterosexual persons, nor among other sexual minorities.

Medical Transition Status

In the model that included self-reported racism, self-reported transphobia, and the interaction between them as potential predictors of past-year HIV-related sexual risk behaviour, we found no significant interaction between self-reported racism and self-reported transphobia among those who had completed their medical transition to their satisfaction. There was also no significant interaction among those who reported that they were in the process of medically transitioning. Additionally, self-reported racism and self-reported transphobia were not found to interact in predicting past-year HIV-related sexual risk behaviour among those who had not begun or were not planning on transitioning.

In the model that excluded the interaction term, self-reported transphobia (adjusted for self-reported racism) significantly impacted the odds of high risk sex among those who had completed their medical transition, such that, those experiencing more self-reported transphobia had greater odds of reporting having high risk sex

rather than low risk sex (OR = 1.32, CI = 1.08 – 1.61, p = 0.0065). Among those in the process of medically transitioning, self-reported transphobia's impact on the odds of not engaging in sex approached significance, such that, those experiencing more self-reported transphobia had lower odds of reporting non-engagement in sex (OR = 0.92, CI = 0.83 – 1.02, p = 0.0992). Among those who had not begun or were not planning to medically transition, self-reported racism (adjusted for self-reported transphobia) impacted upon the odds of engaging in high risk sexual behaviour; so that those reporting more racism had lower odds of reporting engagement in high risk sex (OR = 0.87, CI = 0.78 – 0.98, p = 0.0233). Also within this group, self-reported transphobia (adjusted for self-reported racism) impacted the odds of reporting having no sex; specifically, those with more self-reported transphobia had greater odds of not engaging in sex (OR = 1.12, CI = 1.01 – 1.25, p = 0.0372).

In unadjusted models, self-reported racism's impact on the odds of not engaging in sex approached significance among those in the process of medically transitioning. Those reporting more racism had lower odds of non-engagement in sex (OR = 0.91, 0.83 – 1.00, CI = p = 0.0567). Self-reported racism had no detectable impact among those who had satisfactorily completed their medical transition status nor among those who had not begun or were not planning on medically transitioning. However, self-reported transphobia (unadjusted by self-reported racism) had a significant impact on the odds of self-reported engagement in high risk sex among those who stated that they had completed their medical transition. Those with more self-reported transphobia had greater odds of reporting engaging in high risk rather than low risk sex (OR = 1.28, CI = 1.09 – 1.51, p = 0.0033). Among those in the process of medically transitioning, self-reported transphobia was associated with the odds of reporting not engaging in sex, such that, those experiencing more self-reported transphobia had lower odds of not engaging in sex (OR = 0.91, CI = 0.82 – 1.00, p = 0.0460). Self-reported transphobia, unadjusted by self-reported racism, had no detectable impact among those who were not planning or had not begun medically transitioning.

Social Support

When stratified by social support, we found no interaction between self-reported racism and self-reported transphobia in predicting past-year HIV-related sexual risk behaviour at any level of social support however, among those who had social support more than most of the time, the interaction approached significance (p = 0.0670). Suggesting that at high levels of social support self-reported racism may have a different impact on sex risk at different levels of self-reported transphobia, or vice versa, that self-reported transphobia has a different impact on sex risk at different levels of self-reported racism.

In a model that excluded the interaction term, neither self-reported racism nor self-reported transphobia were found to significantly impact upon past-year HIV-related sexual risk behaviour for those who had social support some of the time or less. However, among those who had social support some to most of the time, self-reported racism was significantly associated with the odds of reporting not having sex in the past-year. Those with more self-reported racism, adjusted for self-reported transphobia, had lower odds of reporting not having sex (OR = 0.83, CI = 0.71 – 0.98, p = 0.0231). Self-reported racism's impact approached significance for those who had social support most of the time or more often, such that, those with more self-reported racism had lower odds of reporting past-year engagement in high risk sex compared to low risk sex (OR = 0.78, CI = 0.59 – 1.05, p = 0.0983). Self-reported transphobia, adjusted for self-reported racism, had no detectable impact on past-year HIV-related sexual risk behaviour at any level of social support.

When examining self-reported racism's impact on past-year HIV-related sexual risk behaviour independently of self-reported transphobia, we found that among those with social support more than some to most of the time, that those reporting more racism had lower odds of reporting non-engagement in sex (OR = 0.83, CI = 0.71 – 0.96, p = 0.0112). Self-reported transphobia, however, was not found to have an independent impact upon past-year HIV-related sexual risk behaviour at any level, when stratified by social support.

Identity Support

Among those with low levels of identity support, there was almost a significant interaction between self-reported racism and self-reported transphobia in predicting reported high risk sexual behaviour (p = 0.0737). In this same model, self-reported racism's impact also approached significance (p = 0.0561). Those with more self-reported racism (where self-reported transphobia = 0) had lower odds of reporting engaging in high risk sex versus low risk sex (OR = 0.61, CI = 0.37, 1.01). Among those with higher levels of identity support, we detected no significant interaction between self-reported racism and transphobia in predicting sexual risk behaviour.

In the model which excluded the interaction term, neither self-reported racism, nor self-reported transphobia were found to be associated with past-year HIV-related sexual risk behaviour among those with low levels of identity support. Among those with higher levels of identity support, self-reported racism (adjusted for self-reported transphobia) did significantly predict past-year HIV-related sexual risk behaviour. Specifically, increased self-reported racism was associated with lower odds of reporting non-engagement in sex versus low risk sex (OR

= 0.74, CI = 0.62 – 0.89, p = 0.0016). There were also lower odds of reporting high risk sex rather than low risk sex among those with more self-reported racism (adjusted for self-reported transphobia); this association only approached significance however (OR = 0.92, CI = 0.83, 1.01, p = 0.0729). Self-reported transphobia did not increase the odds of reporting either high risk sex or non-engagement in sex for those experiencing higher levels of identity support.

Table 3.2.3e Logistic Regression Model of Self-Reported Racism, Self-Reported Transphobia, and their Intersection as Predictors of Past-Year HIV-Related Sexual Risk Behaviour Among Trans Ontarians with High Identity Support, N=254

	Maximum Likelihood Estimate	Standard Error	Wald Chi-Square	p-value	OR (95% CI)
Overall Analysis of Effects					
Self-reported racism	---	---	12.0276	0.0024	---
Self-reported transphobia	---	---	2.9354	0.2305	---
No Sex vs. Low Risk Sex					
Intercept	- 0.1718	0.5235	0.1077	0.7428	0.84 (0.30, 2.35)
Self-reported racism	- 0.2968	0.0943	9.9158	0.0016	0.74 (0.62, 0.89)
Self-reported transphobia	- 0.0133	0.0367	0.1316	0.7168	0.99 (0.92, 1.06)
High vs. Low Risk					
Intercept	- 2.6295	0.7520	12.2268	0.0005	0.07 (0.02, 0.31)
Self-reported racism	- 0.0868	0.0484	3.2165	0.0729	0.92 (0.83, 1.01)
Self-reported transphobia	0.0782	0.0501	2.4361	0.1186	1.08 (0.98, 1.19)

In unadjusted models, the association between self-reported racism and past-year HIV-related sexual risk behaviour was even more significant (p = 0.0014) when contrasting the odds of reporting no sex to the odds of reporting low risk sex for those with higher levels of identity support; so that there were lower odds of reporting non-engagement in sex (rather than low risk sex) among those with more self-reported racism (OR= 0.74, CI = 0.62 – 0.89). This association was not found for those with low levels of identity support. Unadjusted for self-reported racism, self-reported transphobia was not found to be significantly associated with past-year HIV-related sexual risk behaviour for those with either low or high identity support.

Poverty

We found no significant interaction between self-reported racism and self-reported transphobia in predicting past-year HIV-related sexual risk behaviour when stratified by low-income level; i.e. self-reported racism and self-reported transphobia did not interact to predict past-year HIV-related sexual risk behaviour for either those living above or below the low-income cut-off.

However, in a model that excluded the interaction term, we noted that among those living below the low-income cut-off, both self-reported racism and self-reported transphobia's impact on past-year HIV-related sexual risk behaviour approached significance. Those with higher levels of self-reported racism (adjusted for self-reported transphobia) had slightly lower odds of reporting engaging in high risk sex rather than low risk sex (OR = 0.91, CI = 0.83 – 1.01, p = 0.0696); while those with more self-reported transphobia (adjusted for self-reported racism) had slightly greater odds of reporting engaging in high risk sex rather than low risk sex (OR = 1.15, CI = 0.98 – 1.134, p = 0.0894). For those living above the low-income cut-off, self-reported racism (adjusted for self-reported transphobia) was found to be significantly associated with past-year HIV-related sexual risk behaviour, such that, those with greater amounts of self-reported racism were less likely to report not having sex compared to low risk sex; i.e. self-reported racism did not increase the odds of reporting not having sex (OR = 0.89, CI = 0.80 – 0.98, p=0.0191). These individuals were also less likely to report high risk sex rather than low risk sex, but this association was not significant (p = 0.1902). There was no evidence that self-reported transphobia had an impact upon past-year HIV-related sexual risk behaviour for those living above the LICO in this model.

Table 3.2.3f Logistic Regression Model of Self-Reported Racism and Transphobia as Predictors of Past-Year HIV-Related Sexual Risk Behaviour among Trans Ontarians Living above the Low-Income Cut-off, N=267

	Maximum Likelihood Estimate	Standard Error	Wald Chi-Square	p-value	OR (95% CI)
Overall Analysis of Effects					
Self-reported racism	---	---	5.9749	0.0504	---
Self-reported transphobia	---	---	0.0856	0.9581	---
No Sex vs. Low Risk Sex					
Intercept	-0.1680	0.5499	0.0933	0.7600	0.85 (0.29, 2.48)
Self-reported racism	-0.1209	0.0516	5.4961	0.0191	0.89 (0.80, 0.98)
Self-reported transphobia	0.00319	0.0384	0.0069	0.9337	1.00 (0.93, 1.08)
High vs. Low Risk					
Intercept	-1.2979	0.6349	4.1793	0.0409	0.27 (0.08, 0.95)
Self-reported racism	-0.0686	0.0524	1.7160	0.1902	0.93 (0.84, 1.04)
Self-reported transphobia	-0.00833	0.0347	0.0576	0.8103	0.99 (0.93, 1.06)

Self-reported racism (unadjusted for self-reported transphobia) was significantly associated with past-year HIV-related sexual risk behaviour for those living above the low-income cut-off, such that those reporting greater amounts of racism had lower odds of reporting having no sex rather than low risk sex (OR = 0.89, CI = 0.80 – 0.98, p = 0.0167); and were also less likely to report high risk sex rather than low risk sex (p=0.3135, i.e. not significant). These associations were in a similar direction, but not significant when examining the relationship for those living below the poverty line. In a model unadjusted by self-reported racism, self-reported transphobia was not found to be significantly associated with past-year HIV-related sexual risk behaviour when stratified by LICO (results not shown).

To further explore the predictors of past-year HIV-related sexual risk behaviour, a multivariable regression analysis was conducted. Specifically, using step-wise regression, we built a model that of past-year HIV-related sexual risk behaviour to further test the associations between racism, transphobia and other characteristics in potential association with HIV-related sexual risk behaviour. The procedure is described in detail below.

3.3 Predicting HIV-Related Sexual Risk Behaviour among Trans Ontarians

In accordance with the third objective of this thesis, a model predicting past-year HIV-related sexual risk behaviour among trans Ontarians was built. We first, however, describe the potential proximal sex-related covariates of past-year HIV-related sexual risk behaviour. Note that trans Ontarians, exert a very high level of sexual agency in sexual situations with 62.0% (54.3% - 71.4%) reporting very high levels of efficacy of condom or barrier use. Approximately 22.5% (15.6% - 30.7%) of trans Ontarians face moderate amounts or greater of sexual anxiety, while only 11.0% (6.1% - 16.5%) expressed feeling moderate amounts or greater fear when it came to sexual situations. On the other hand, only 19.9% (13.3% - 26.4%) expressed being at least moderately satisfied sexually. Finally, 13.3% (6.9% - 18.5%) of trans Ontarians had a significant amount of concern about their bodies.

Table 3.3.1a Weighted Prevalence Estimates of Proximal Sex-Related Variables

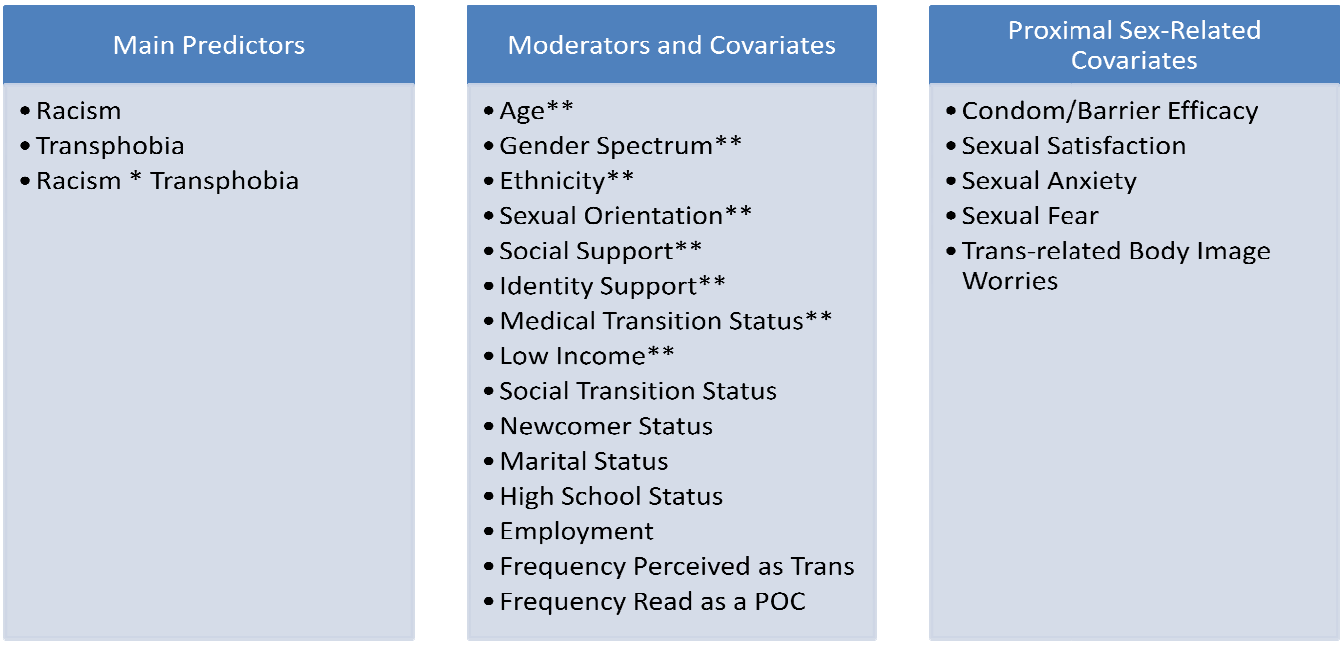
Sex-Related Characteristics (n)	**% (95% C.I.)**
Condom/Barrier Efficacy	
Moderate efficacy or less (average score ≤ 2)	4.0 (1.9, 7.5)
Moderate to high efficacy (2 < average score ≤ 4)	14.5 (8.7, 20.0)
High to very high efficacy (4 < average score ≤ 5)	19.4 (11.7, 26.3)
Very high efficacy (5 < average score ≤ 6)	62.0 (54.3, 71.4)
Sexual Anxiety	
Slight anxiety or less (average score ≤ 1)	34.9 (26.6, 42.3)
Slight to some anxiety (1 < average score ≤ 2)	19.8 (13.5, 25.9)
Some to moderate anxiety (2 < average score ≤ 3)	22.8 (17.1, 30.3)
Moderate to a lot of anxiety (3 < average score ≤ 4)	22.5 (15.6, 30.7)
Sexual Satisfaction	
Little satisfaction or less (average score ≤ 1)	43.5 (35.1, 52.2)
Little to some satisfaction (1 < average score ≤ 2)	16.9 (11.4, 22.6)
Some to moderate satisfaction (2 < average score ≤ 3)	19.7 (13.3, 27.2)
Moderate to a lot of satisfaction (3 < average score ≤ 4)	19.9 (13.3, 26.4)
Sexual Fear	
Slight fear or less (average score ≤ 1)	46.9 (37.7, 54.1)
Slight to some fear (1 < average score ≤ 2)	21.6 (15.4, 27.6)
Some to moderate fear (2 < average score ≤ 3)	20.5 (15.1, 29.0)
Moderate to a lot of fear (3 < average score ≤ 4)	11.0 (6.1, 16.5)
Trans-Related Body Image Issues	
Few body-image issues or less (average score ≤ 1)	21.3 (14.7, 28.1)
A few to some issues (1 < average score ≤ 2)	37.2 (29.3, 45.3)
Some to a moderate amount of issues (2 < average score ≤ 3)	28.3 (21.7, 37.3)
A moderate amount to a lot of issues (3 < average score ≤ 4)	13.3 (6.9, 18.5)

In stage 1 of the model building procedure, the main hypothesized predictors of past-year HIV-related sexual risk behaviour that were included were self-reported racism, self-reported transphobia, and the interaction between them. At this first stage there was no evidence of a significant association with past-year HIV-related sexual risk behaviour. However, the interaction term was kept in at this stage.

At the second stage of model building procedure, the socio-demographic variables earlier described in analyses 1 and 2, were added, with some being modeled as potential moderators, and thus assessed for interaction with self-reported racism and self-reported transphobia. Age status was used rather than youth status at this stage, since age may very well be a confounder between a number of variables and past-year HIV-related sexual risk behaviour, and the dichotomous youth variable may have been insufficient to properly control for the potential confounding. After addition into the model, variables not significantly associated with sexual risk behaviour at $p < 0.1$ (except for the main predictors, including the interaction between racism and transphobia) were subsequently dropped. The criterion value $p < 0.1$ was arbitrarily chosen.

At the third stage of the model building procedure, the potential proximal sex-related covariates were added including condom/barrier efficacy, sexual anxiety, sexual satisfaction, sexual fear, and trans-related body image issues. The proximal sex-related variables found to be associated with past-year HIV-related sexual risk behaviour at this stage included, condom/barrier efficacy, sexual satisfaction and trans-related body image issues. After addition into the model, variables not significantly associated with sexual risk behaviour at a more stringent alpha level of $p < 0.05$ were subsequently dropped. This included the racism x transphobia interaction term, which was not significant.

Figure 2: Variables in the Model of Association with Past-Year HIV-Related Sexual Risk Behaviour



A final reduced model remained in which racism, transphobia, age, sexual orientation interacting with both racism and transphobia, ethnicity interacting with racism, gender spectrum, medical transition status interacting with transphobia, marital status, condom/barrier efficacy, sexual satisfaction and trans-related body image issues were all significantly associated with past-year HIV-related sexual risk behaviour in at least one of the two sex risk comparisons.

Specifically, we noted that with increasing age came greater odds of reporting engaging in no sex rather than low risk sex (OR = 1.13, CI = 1.05 – 1.22, p=0.0081). Bisexual and pansexual persons had lower odds of reporting non-engagement in sex compared to heterosexual persons (OR = 0.01, CI = 0.00 – 0.42, p = 0.0182) when self-reported racism and self-reported transphobia were both zero and each variable was set to its referent. Gay and lesbian persons also had lower odds of reporting non-engagement in sex compared to heterosexual persons (OR = 0.00, CI = 0.00 – 0.07, p = 0.0019) when self-reported racism and self-reported transphobia were both zero and each variable was set to its referent. Other sexual minorities too had lower odds of reporting non-engagement in sex compared to heterosexual persons (self-reported racism=0 and self-reported transphobia=0 and

variables=referent) (OR = 0.02, CI = 0.00 – 0.80, p = 0.0377). The association between sexual orientation and past-year HIV-related sexual risk behaviour was modified by self-reported racism and self-reported transphobia, suggesting that at different levels of self-reported racism and self-reported transphobia the role of sexual orientation in determining sexual risk behaviour may differ. For example, in the absence of self-reported racism, sexual orientation (net of the other variables in the model) did not predict reported engagement in high risk sex however, interacting with self-reported racism, minority sexual orientation increased the odds of reporting engagement in high risk sex behaviour for gay and lesbian individuals and other sexual minorities compared to heterosexual persons. Additionally, in the absence of self-reported transphobia, minority sexual orientation was associated with decreased odds of reporting non-engagement in sex, however, in interaction with self-reported transphobia, minority sexual orientation was associated with increased odds of reporting non-engagement in sex for bisexual and pansexual persons and gay and lesbian persons compared to straight persons.

In this model, in the absence of self-reported racism, Non-Aboriginal Persons of Colour had lower odds of reporting engaging in high risk sex compared to White persons (OR = 0.00, CI = 0.00 – 0.66, p = 0.0312). However, the experience of self-reported racism modifies this association and in interaction with racism, there were increased odds of engagement in high risk sex, net of all other variables in the model.

We noted an impact of gender spectrum on sexual risk behaviour, as MTFs had significantly greater odds of engaging in high risk sex compared to FTMs (OR =8.01, CI = 2.09 – 30.65, p = 0.0024) net of all other variables in the model. In the absence of transphobia, those who had completed their medical transition to their liking had lower odds of reporting engagement in high risk sex compared to those who had not begun or were not planning a medical transition (OR = 0.00, CI = 0.00 – 0.34, p = 0.0150), while those who reported being in the process of medically transitioning had greater odds of reporting non-engagement in sex compared to those who had not begun or were not planning a medical transition (OR = 116.93, 4.75 - **U[1], p = 0.0036). Self-reported transphobia moderated this association, since, in conjunction with transphobia, those who reported being in the process of medically transitioning had *lower* odds of reporting non-engagement in sex compared to those who had not begun or were not planning a medical transition. In addition, in interaction with transphobia those who had completed their medical transition had significantly lower odds of non-engagement in sex.

Compared to those who had never been married, those who were living common law had lower odds of reporting no sex in the past year (OR = 0.01, CI = 0.00 – 0.14, p = 0.0006) net of all other variables in the model.

[1] Upper limit is excessively large, i.e. greater than 999.99.

In regards to the potential proximal sex-related covariates of past-year HIV-related sexual risk behaviour, when all variables were set to the referent, those with higher levels of condom/barrier efficacy had significantly lower odds of reporting engaging in high risk sex (OR = 0.57, CI = 0.37 – 0.88, p = 0.0105). Those with higher levels of sexual satisfaction had lower odds of reported non-engagement in sex (OR = 0.47, CI = 0.25 – 0.88, p = 0.0200), and higher odds of reported high risk sex (OR = 2.04, CI = 1.13 – 3.69, p = 0.0177), while those with a greater amount of reported trans-related body image worries had greater odds of reporting no past-year sex rather than low risk sex (OR = 2.63, CI = 1.04 – 6.64, p = 0.0407), net of all other variables in the model.

Self-reported racism and self-reported transphobia also played a role in predicting past-year HIV-related sexual risk behaviour net of all other variables in the reduced model. Specifically, self-reported racism was associated with decreased odds of reporting high risk sex in the past year (OR = 0.62, CI = 0.43 – 0.88, p = 0.0081), while self-reported transphobia was associated with decreased odds of reported non-engagement in sex in the past year (OR = 0.82, CI = 0.68 – 0.99, p = 0.0377). The association between HIV-related sexual risk behaviour and racism, however, is potentially modified by sexual orientation and ethnicity, while the association between HIV-related sexual risk behaviour and transphobia is potentially modified by sexual orientation and medical transition status, as seen by the significant interaction terms. The full impact of racism on HIV-related sexual risk behaviour is thus dependent upon an individual's ethnicity and sexual orientation, while the impact of transphobia depends upon the individual's sexual orientation and medical transition status.

3.4 Homophily and Heterophily in the Results

Usually valid statistical inference requires that samples be random probability samples in which the probability of being sampled is known[73]. In the case of the non-probability RDS sampling methods used in this study, homophily bias may be introduced and the precision of estimators may only be subjectively estimable[104]. Yet RDSAT allows for the computing of homophily and allows the data to be sufficiently modeled so that theory and inference can be made without fear of excessive bias. While bias can never be completely ruled out, using RDSAT reduces it to a degree that allows reasonable results. We are able to determine the extent to which affiliation affects random mixing due to the birds of a feather principle of by examining the affiliation homophily (AH), as well as, the extent to which affiliation departs from random mixing due to different network size by examining the degree homophily (DH)[105]. According to Wejnert *et al*[105], AH may be considered a measure of social differentiation while DH may be considered a measure of social inequality. Homophily will only be relevant to consistent coefficient estimation in the model if it is related to the outcome variable, overall homophily for each variable is less informative than homophily by the outcome variable.

Of main interest to us is whether or not homophily bias persisted for any of our variables crossed with the outcome variables for analyses 1 through 3, and whether or not that had any bearing on the accuracy of our results. Examination of homophily allows us to assess differences in recruitment patterns and can establish either affiliation tendency or difference in degree exist for certain groups[105]. The measure of homophily, as already discussed, ranges from -1 (complete heterophily) to +1 (complete homophily), corresponding to 100% out-group recruitment and 100% in-group recruitment respectively[81,82].

Either complete heterophily or complete homophily by either affiliation or degree was detected for some demographic groups. For example when sexual orientation was considered, the asexual group was 100% heterophilous, only recruiting non-asexual persons. This was almost entirely the result of affiliation homophily, which was also 100%. This may have been an issue had we not decided to collapse the asexual group into the "other sexual minorities" group due to too small numbers of asexual persons. The small sample size is likely a contributing factor to the heterophily observed, as it may be more unlikely to be connected to a group with very few members versus a larger, and thus more ubiquitous, group. The bisexual or pansexual group had ~9% in-group recruitment (which implies ~81% of people were recruited by random mixing), gay and lesbian persons had ~13 in-group recruitment, straight/heterosexual persons had 14% in-group recruitment, other minorities

had ~17% in-group recruitment and those who were questioning or unsure of their sexual orientation identities also had ~17% in-group recruitment; recruiting 83% of members through random mixing.

Newcomers also displayed complete heterophily of recruitment, each recruiting 100% from the non-newcomer group, i.e. those in Canada 5 years or more. The affiliation homophily suggests that newcomers are more likely to associate with long-term residents in Canada. Individuals who had been in Canada for five years or more displayed only 11% of in-group recruitment, yet affiliation homophily was near zero (-0.001). Degree homophily was almost 14%, accounting for the level of homophily in this group. Recruitment by immigration status also showed a high level of heterophily. While Canadian citizens were neutral in their recruitment (overall homophily was -0.003), permanent residents and those who were in Canada on student, work or visitors' visas were completely heterophilous in their recruitment, and this was overwhelmingly due to affiliation homophily, which were -1 and -0.999 respectively. Those rarely read as persons of colour were also completely heterophilous in their recruitment due exclusively to affiliation or non-affiliation as the case may be (AH = -1.). Those never perceived as POCs recruited ~20% from within their own group, those sometimes perceived as POCs recruited 1% from within their own group, and those often perceived as POCs recruited ~17% from within their own group.

Reporting on overall homophily for variables in which homophily was not excessive, youth had ~36% in-group recruitment, while adults had ~46% in-group recruitment. FTMs had ~31% in-group recruitment, while MTFs had ~38% in-group recruitment. Non-Aboriginal Whites recruited 15 ½ % of other Non-Aboriginal Whites, while Aboriginal persons recruited 6% from its own group, and Non-Aboriginal Persons of Colour recruited almost 16% from its own group. Those never perceived as trans had ~12% in-group recruitment, while those rarely perceived as trans had H = -0.085, i.e. recruitment was nearly random but slightly heterophilous in this group; they formed ~81% of ties randomly, and ~9% of ties outside the group.

Those sometimes perceived as trans had H = -0.051, and those often perceived as trans had H = 0.027, i.e. the vast majority of ties were made randomly, with 3% in-group preference. Those who had completed their medical transition to their suitability had ~38% in-group recruitment, those in process had 7% in-group recruitment, and those who had not begun or who were not planning on medically transitioning had ~8% in-group recruitment. In terms of mixing by social transition status, we noted that those living full-time in their felt gender had ~37% in-group recruitment, those living in their felt gender part-time had ~6% in-group recruitment, and those not living in their felt gender had H = - 0.034, representing very nearly random recruitment.

There was again, only moderate homophily by marital status. For those never married homophily was ~24%, it was ~3% for those who were separated, widowed or divorced, ~11% for those in common-law unions, and ~21% for married individuals. The homophily breakdown for the education variable was ~5% homophily for those who had not completed high school. The value was less than zero for those who had completed high school at - 0.09, suggesting near random mixing with some preference for forming out-group ties. For those with some postsecondary school the homophily index was only about 1%, and for those who had completed a postsecondary education homophily was quite a bit higher with 23% in-group ties, and the rest formed through random mixing.

In-group homophily for the unemployed was ~18%, ~4% for those employed part-time, ~0 for those self-employed part-time – i.e. almost completely random mixing, ~1% for those employed full-time, ~13% of ties among those self-employed full-time were formed outside the group with H = ~-0.13, while people in the "other" category preferred in-group recruitment with H = ~0.08. By income, those with less than $5,000 yearly income had a homophily index of ~0.13, H = ~ -0.14 for those making $5,000 – less than $15,000, H = ~0.01 for those making $15,000 – less than $30,000, H = ~0.15 for those making $30,000 – less than $50,000, H = 0.13 for those making $50,000 – less than $80,000, and homophily was ~0.21 for those making $80,000 or more with a greater preference of in-group ties compared to those at lower income levels. The results showed that affiliation by demographic markers was largely unproblematic.

4. Discussion

4.1 Summary and Conclusions

Generally speaking, our results do not depict a picture of maladaptive behaviour on the part of trans Ontarians in response to racism and transphobia. The impact of racism and transphobia on sexual risk behaviour was quite limited, and there is no great evidence of interaction between them except perhaps among non-Aboriginal persons of colour. Additionally, confidence limits around prevalence estimates and odds ratios were wide throughout suggesting that we had very poor power, resulting in low precision in some of our results. Additionally, we can safely assume that the excess risk of HIV acquisition for trans persons of colour is not wholly related to risky sexual behaviour, though the relationship is quite complex and may depend upon other individual characteristics including sexual orientation, ethnicity and medical transition status.

4.1.1 Analysis 1 – Landscape of Risk of Self-Reported Racism and Transphobia

Given that the entire sample used for our analyses consisted of trans-identified individuals, it came with some disappointment, but very little surprise that the prevalence of self-reported transphobia was so high, with almost 97.8% (97.1% - 100.0%) reporting having had at least one transphobic experience. There was more variation in the reported experience of racism, however, as only 44.7% (36.6% - 52.5%) of trans persons can be expected to report at least one experience of racism. Interestingly, while the reported experience of racism was more prevalent among Aboriginals and Non-Aboriginal Persons of Colour as expected, more than a third of Non-Aboriginal Whites reported experiencing at least one instance of racism, which was more than expected suggesting that minority groups do not hold a monopoly on experiences of racism. Racism, and the experience thereof, is context specific; it is more than likely that Whites may experience racism from racialized individuals, or during travels to areas where they become the minority, or it may be that some who self-report as White may be perceived by others as a person of colour, and face the discrimination stress that researchers perhaps felt was experienced only by those who possess minority group membership[4,11], on the other hand, according to a secondary account at least one non-Aboriginal White person reported a racist experience related to her Jewish ethnicity.

Examination of the multivariable models (Tables 3.1.2b and 3.1.3b) showed an accumulation of self-reported racism with increasing age, more reported racism among Aboriginals and Non-Aboriginal people of colour, and among newcomers to Canada and less among those living above the low-income cut-off suggesting either less exposure to racism, or less notice of racism for those bringing in higher incomes; i.e. a protective effect of income. Those with greater amounts of identity support, net of all other variables in the model, also reported experiencing less racism, perhaps suggesting that perceived support in one arena of life lessens the impact or the experience of discrimination in another arena. Those who had completed high school also had much greater odds of reporting racism compared to those who had not completed high school, and this effect was adjusted for age. This may be because being within an environment such as the school environment may present more opportunities to come into contact with a greater amount and a wider variety of people, thus increasing the likelihood of encountering racism, or perhaps, those at higher educational levels are more aware of discriminatory treatment. However, the odds ratio depicting this association is very large and the confidence limits quite wide, thus interpretation should be made with great caution.

The finding that individuals at older ages had reduced odds of reporting transphobia, can be interpreted in several ways. Either, young persons are more likely to perceive transphobia, or older individuals are somehow more buffered against transphobia thus less likely to perceive and report it, or just as likely, the results may indicate a survival bias. Among vulnerable trans populations, psychological vulnerability, and ensuing suicidal ideation and attempts are prevalent[106]. As expected, MTFs reported greater levels of self-reported transphobia compared to FTMs. According to Brooks[9], MTFs can expect to face more hatred for sexist reasons. Specifically, they are seen as transitioning from the stronger (male) sex to the weaker (female) sex, which goes against reason. The finding that gay or lesbian individuals reported greater amounts of transphobia can be interpreted in several ways. It may be that sexual minority individuals are more cognizant of discrimination, i.e. in the form of transphobia, and are therefore more likely to perceive it, or it may be that events related to their sexual minority status are being perceived and reported as transphobic events, or simply that, gay and lesbian persons who also happen to be trans are more likely to experience transphobia, it is certainly conceivable that as occupants of two marginal spaces by their orientation and gender spectrum, these individuals will face greater levels of discrimination; this was explored and borne out in analysis 2. As expected, increased visibility as a trans person associated with more reported transphobia, as those living full-time in their “trans” genders had greater odds of reporting higher levels of transphobia. We also discovered that increased social support seemed to be protective against self-reported transphobia which confirms findings from the literature[4]. Increased identity

support was similarly associated with decreased levels of self-reported transphobia, suggesting its probable role as a buffer against discrimination.

4.1.2 Analysis 2 – Self-Reported Racism and Transphobia and Past-year HIV-Related Sexual Risk Behaviour among Different Groups

Our results may hint at a three-way interaction between self-reported racism, self-reported transphobia and ethnicity in predicting past-year HIV-related sexual risk behaviour, as the interaction differed by ethnicity and was found to be most important among Non-Aboriginal Persons of Colour. However, no evidence of an interaction between racism and transphobia could be found among either Whites or Aboriginal person. The interaction found when looking within the Non-Aboriginal POC group was quantitative. Among Non-Aboriginal Persons of Colour, self-reported racism increased the odds of reporting having had high risk sex in the past year. Within this group, greater experience of self-reported transphobia was similarly associated with increased odds of reported high risk sex in the past year. See table 3.2.3d.

Despite the fact that twice as many MTFs reported not having sex compared to FTMs (50.3% vs. 24.8%), and more than twice as many MTFs reported engaging in high risk sex compared to FTMs (19.2% vs. 6.7%), and these were found to be significantly different, gender spectrum was not found to significantly associated with past-year HIV-related sexual risk behaviour at this stage of the analysis, nor was it found to moderate the effect of self-reported racism and self-reported transphobia on past-year HIV-related sexual risk behaviour. Therefore, while MTFs and FTMs do differ in terms of the proportion reporting certain sexual risk behaviours, that neither racism nor transphobia will differ in their *impact* on past-year HIV-related sexual risk behaviour when comparing MTFs and FTMs.

As suggested by Sugano *et al*[58], there appeared an interaction between youth status and self-reported transphobia in predicting past-year HIV-related sexual risk behaviour, such that youth (16-24) reporting greater levels of transphobia had greater odds of reporting engagement in high risk sex in the past year. This effect was not found among the older participants. Sugano *et al*[58] suggest, that this may mean that youth lack the necessary resources needed to respond to the challenges of perceived transphobia, while older adults may have over time acquired the coping skills necessary to overcome its impact, if we assume no survival bias exists.

At this stage of the analysis, we also noted a potential interaction between self-reported transphobia and sexual orientation. Bisexual and pansexual persons experiencing more self-reported transphobia were more likely to report engaging in high risk sex behaviour compared to heterosexual persons. This is not surprising as bisexual and pansexual persons may also be facing other forms of oppression or challenges based upon their orientations, and not just their gender identities. When the moderator was medical transition status, self-reported transphobia increased the odds of self-reported engagement in high risk sex among those who had completed their medical transition, while increasing the odds of reported non-engagement in sex for those who were in the process of transitioning. It was important to identify medical transition status's role as a moderator since it may be that choice of sexual behaviour is more dependent upon stage of transition than the experience of self-reported transphobia, for instance, if it be the case that at some stage in the transition people are unable or unwilling to engage in sexual intercourse; which may be what we are detecting here. We also noted an interesting impact of self-reported racism, as it was associated with decreased odds of reported engagement in high risk sex among those who were not planning or who had not begun transitioning. It would have been interesting to explore exactly who belongs to this "not begun or not planning to transition" group. Anecdotal evidence suggests that people of colour are the least likely to transition even in the face of forever living in the wrong gender because they could expect to face not only more transphobia as a result of a transition, but also more racism as well.

Greater levels of self-reported racism promoted reported engagement in low risk sex rather than no sex when examining the social support domains. Here, we did not find significant moderation of the impact of self-reported transphobia on past-year HIV-related sexual risk behaviour by social support. However, our inability to identify social support as a moderator in determining sex risk does not mean that it does not play that role; recall that Strathdee[66] found that young gay and bisexual men reporting low levels of social support were significantly more likely to have recently had unprotected anal sex with casual partners. In the analysis of social support as a moderator, we were forced to collapse the very lowest levels of social support due to small cell sizes, and we suspect that this may have concealed the impact of very low social support on past-year HIV-related sexual risk behaviour.

Among those with higher levels of identity support, self-reported racism was again predictive of low risk sex rather than no sex. Similarly, among those living above the low income cut-off increased self-reported racism meant increased odds of reporting low risk sex rather than no sex. The choice to examine the odds of not having sex was made because we felt that discrimination may not necessarily only lead to increased risk behaviour, but

may also lead to withdrawal from the sexual arena altogether. Trans status may also limit the availability of potential sexual partners. We modeled past-year HIV-related sexual risk behaviour as a three level variable and allowed independent comparison of no sex and low risk sex, as well as, low risk sex and high risk sex, rather than model it as an ordinal-level variable with progression from no sex to high risk sex so that we could observe associations in opposite directions, i.e. towards high risk sex or towards no sex at all. Nevertheless, no trend towards withdrawal from the sexual arena due to either self-reported racism or transphobia was observed in our results. Though it was easy to imagine why discrimination especially due to trans status may have promoted avoidance of sexual situations. For example, one item in the self-reported racism scale asked whether or not partners paid more attention to participants' race rather than who they were as persons. Another question in the self-reported racism scale asked whether participants were sexually objectified due to race, and similarly one in the self-reported transphobia scale asked if participants had ever been fetishized due to being trans. Yet another question in the self-reported transphobia scale asked whether or not participants had ever heard that trans people weren't normal. Yet objectification and fetishization may also be associated with increased odds of sex; certainly being seen as an object of sexual pleasure may appeal to some. In addition, we have discussed in detail that trans persons often seek out sex as a means of affirming worth, due to a need for closeness, and to satisfy emotional needs[3,68]. It is understandable then that trans persons reporting more racism would also report engagement in at least low risk sex.

4.1.3 Analysis 3 – Predicting Self-Reported Past-Year HIV-Related Sex Risk Behaviour

Self-reported racism and self-reported transphobia are indeed associated with past-year HIV-related sexual risk behaviour, though the relationship is complex and dependent upon other variables. Our results showed that for the most part, increased self-reported racism did not promote an increase in high risk sexual behaviour, but was more often associated with decreased odds of high risk sex. However, self-reported racism does increase the odds of high risk sex for non-Aboriginal persons of colour, as well as, for gay and lesbian individuals and other sexual minorities. This may result in increased vulnerability to HIV, depending upon the level of racism being experienced, and the baseline odds of risk. Additionally, increased self-reported transphobia was associated with lower odds of non-engagement in sex (except for certain sexual minority groups), but not necessarily increased engagement in high risk sex.

Finally, as was expected, higher levels of condom/barrier efficacy predicted decreased odds of high risk sexual behaviour, and increased trans-related body image worries predicted increased odds of reported non-

engagement in sex. The role of sexual satisfaction was also to be expected, with those experiencing more sexual satisfaction having lower odds of reporting non-engagement in sex. Nevertheless, those reporting greater sexual satisfaction also had greater odds of reporting engagement in high risk sex.

4.2 Limitations

Our results are qualified by limitations, for example, our measures of racism and transphobia are self-reported, so that we may be assessing people's tendency to attribute unfair experiences to discrimination rather than measuring actual experiences of racism and transphobia. Furthermore, the explicit terminology embedded in the questions, e.g. "have you ever been treated rudely or unfairly because of your race/ethnicity?" and, "how often do you suspect you have been turned down for a job because of your trans identity?" may promote the recollection of past events as being discriminatory in nature, when they may not have been described as such if more neutral terminology were used[19]. On the other hand, the entire survey is by its very nature a self-reported document of the participant's life experiences, and we do not wish to call into question, participants' reliability in terms of their responses to other variables as well. In addition, all interactions and experiences require some form of cognitive appraisal by the individual, and because we are interested in assessing psychosocial pathways to HIV vulnerability, active appraisal and attribution is a necessary step. Furthermore, where explicit terminology may promote attribution, the use of more generic terminology may actually increase attributional ambiguity which may serve as a greater threat to validity[107]. Nonetheless, it is also important to note that there is to date no standard scale to measure exposure self-reported transphobia, and this may also impact upon the validity of our results.

This report began with a discussion of minority stress theory and its health impact. However, we did not have ability to assess either the proximal *moderators* of minority stress, e.g., the characteristics of the minority identity - its prominence, valence and the level of integration with other identities possessed by the person, nor the proximal *mediators*, e.g. internalized self-reported racism[4,29,30]. These moderators and mediators would have certainly added to the picture of how minority stress impacts upon health behaviour, and would have provided depth to our understanding of the psychosocial pathways to sexual risk behaviour were we able to assess them. According to Meyer[4], characteristics of the minority identity, including its prominence, valence and the level of integration with other identities possessed by the person, can impact the level of the stress experienced. Since we were unable to measure these characteristics, we cannot fully understand how minority stress in the form of

self-reported racism and self-reported transphobia contributes to sex risk. Depending upon the importance of the minority status, upon how each individual views his or her minority status, and depending upon the importance of other statuses, e.g. status as a professional, as a parent, etc. and how integrated with these is the minority status, then, stress may be experienced or felt differently. In addition, it may be that these, along with other moderators, may impact how that minority stress is expressed or externalized, potentially impacting upon the consequences of the stress rather than just the level of stress experienced. Additionally, as already noted, apart from stress, minority status is associated with important resources as well, such as group solidarity and cohesiveness that may serve to protect minority members from the adverse health effects of minority stress[108,109]. These too were factors that we were unable to assess in this analysis. Nonetheless, it is impossible to produce a questionnaire that includes all the underlying factors necessary to fully investigate a phenomenon as complex as the impact of social oppression on HIV-related sexual risk behaviour. That we were able to demonstrate the potential contribution of self-reported racism and self-reported transphobia to sexual risk behaviour is itself a significant accomplishment, given the complexity of the associations.

The cross-sectional aspect of this study also limits our conclusions potentially impacting negatively upon the reliability and validity of our results. More specifically, it is not possible to establish temporality of the predictors in reference to the predicted. For example, it may be that some of transphobic events reported by the participants did not in fact precede the past-year HIV-related sexual risk behaviour, and similarly for the reported race-related experiences. Nevertheless, several questions in the self-reported transphobia scale specifically asked participants to recall childhood events, while the sex risk behaviour variable only assessed past year behaviours. Additionally, items in the self-reported racism scale also asked participants to recall childhood events, and given that self-reported racism is so tied to ethnicity and appearance in terms of skin colour, it is likely then that the majority of these experiences were accumulated beginning from birth and therefore preceded the described sexual risk behaviours. An Aboriginal person is born Aboriginal and his experiences related to his ethnicity would likely begin at birth, though depending upon his geographical context these experiences may be either positive, negative or neutral. Despite these rationalizations, the cross-sectional nature of the study does constrain any conclusions we might make as to the direction of the association between self-reported racism, self-reported transphobia and past-year HIV-related sexual risk behaviour. We therefore, make no claims as to the causal nature of the relationships uncovered.

The nature of the outcome variable, being that it is a composite of not only risk, but also identity and behaviour may also appear as a weakness of the study. It may be said that the definition of risk differs depending upon

sexual orientation, gender spectrum, and stage of medical transition. However, this was taken into careful consideration in the analysis, as these factors were modeled as moderators in order to assess their impact. We discovered that medical transition status does play a significant role in predicting risk, but may not theoretically-speaking play a role in *defining* it. Medical transition status was not an objective measure of transition stage along some gender continuum, but rather a personal assessment made by each participant about how comfortable they were with their bodies and how much they were willing to change their bodies using hormones and surgeries. This varied drastically from one person to the next; some who considered their transition to be in process, may have had more surgeries and hormone-induced changes than those who had in their opinions had completed their transition. We also found that ultimately gender spectrum, whether transitioning from male to female, or from female to male did also play a role in predicting risk, whether or not it defines risk is questionable, however. It is certainly the case that the experiences of FTMs differ from the experience of MTFs in terms of self-reported racism and self-reported transphobia and sexual risk behaviour, therefore modeling gender spectrum as a moderator was deemed important. Sexual orientation, also significantly impacted upon sexual risk behaviour, moderating the effects of self-reported racism and self-reported transphobia on sex risk. It is therefore conceivable that our heterosexual, bisexual and pansexual, gay and lesbian, and other sexual minorities groups constitute different risk groups in terms of sexual behaviour. A lesbian person who may only engage in oral sex, or use sex toys for receptive insertive sex may never occupy the same risk space as a heterosexual person who can employ oral sex and receptive or insertive sex using flesh genitals. Here, sexual orientation does seem to define risk. The trouble is among trans persons, who are the lesbians? Is it a trans male who is attracted to non-trans females, a trans female similarly attracted to non-trans females, or a trans female attracted to another trans female? And, who among trans persons may be classified as heterosexual? Is it a trans male attracted to a trans female, or a trans male attracted to a non-trans female? The answer is people are whoever they perceive themselves to be. Remember that according to Kammerer *et al*[3 (p19)], "what from an outsider's perspective is homosexuality may be heterosexuality from the point of view of the participants, since many male-to-female [trans individuals] consider themselves to be having heterosexual sex when they have sex with men". Whatever, the case, the role of sexual orientation was carefully disentangled by the investigation of sexual orientation as a moderator in our analyses.

An important limitation that was identified was the sample size of certain key groups, including Aboriginal persons and Non-Aboriginal Persons of Colour. Indeed the decision to include Latin Americans, East Asians, South Asians, Middle Eastern individuals, South East Asians, Black Canadians, African Americans, and Black Africans in one group was made in part as a response to small sample sizes for these ethnic groups. This

eliminated our ability to form conclusions about the nature of self-reported racism, self-reported transphobia, and past-year HIV-related sexual risk behaviour for these groups independently and may also skew any conclusions concerning the role of ethnicity given the probable great variability of experience between these groups. Nevertheless, despite its small sample size, we were able to produce separate results for Aboriginal persons, a group whose historical experiences in Canada, is certainly unique enough to demand disaggregation. Additionally, because investigations were centered on the experiences of self-reported racism, rather than the demographic assignation of race or ethnicity, our results are not unduly impacted. The wide confidence intervals often produced around those odds ratios associated with the role of ethnicity in our investigations may be the main impact of the small sample sizes. This indicates limited power and poor precision. Where confidence limits are large, interpretations are difficult. Given that a significant interaction between self-reported racism and self-reported transphobia was found within the non-Aboriginal POC group, a larger study able to produce larger samples of these racialized groups would be welcome, as this would allow for the investigation of associations separately for each ethno-racial group, thus increasing our understanding of how self-reported racism and self-reported transphobia differentially impacts upon these groups in terms of HIV-related sexual risk behaviour, and certainly producing more precise and, therefore, more dependable results.

4.3 Recommendations

We established that self-reported racism and self-reported transphobia can impact upon past-year HIV-related sexual risk behaviour. However the overall picture is quite complex and the impact of minority status and the discrimination stress that may result on HIV-related sexual risk behaviour is somewhat limited. More than a third of the non-minority, non-Aboriginal White group reported experiencing racism. Additionally, the reported experience of racism did not necessarily increase high risk sexual behaviour, and more often was predictive of low risk sex. Nevertheless, among Non-Aboriginal Persons of Colour, self-reported racism interacted with self-reported transphobia to increase the odds of reported high risk sex, and this should not be ignored. Transphobia was associated with high risk sex in some groups but not very often, still the impact of transphobia among youth should be addressed by those offering counsel to this vulnerable subgroup. Programs geared towards youth should be a priority for service organizations with the mandate of decreasing the incidence of HIV. These programs may focus on increasing resources for coping with perceived transphobia. Service providers need also be aware that transgender persons with multiple marginal identities, e.g. trans persons of colour or bisexual and pansexual trans persons may be at increased risk of HIV. Condom/barrier efficacy was found to high among trans persons of colour which is a refreshing finding as it is an important factor in lessening HIV-related impact

of engagement in high risk sex where this may occur. Thus despite talk of condom fatigue, this remains an important means of reducing the risk of infection. While having trans-related body image issues did not increase odds of high risk sex behaviour, it was associated with lower odds of any sex at all, which may be indicative of psychological distress leading to disengagement from sexual pursuits. Given the importance of sex to a fulfilling life, trans service providers may want to be aware of this fact and find ways to address it. Future studies examining the role of discrimination on the health and behaviour of trans persons will need to develop and use validated measures of such phenomena as transphobia. Longitudinal studies involving trans persons may also provide more definitive answers regarding the causal relationship between racism, transphobia and sexual risk behaviour, these will also be necessary to establishing mediation and illuminating the psychosocial pathways involved.

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Appendices

Appendix 1: Meyer's Minority Stress Model (2003)

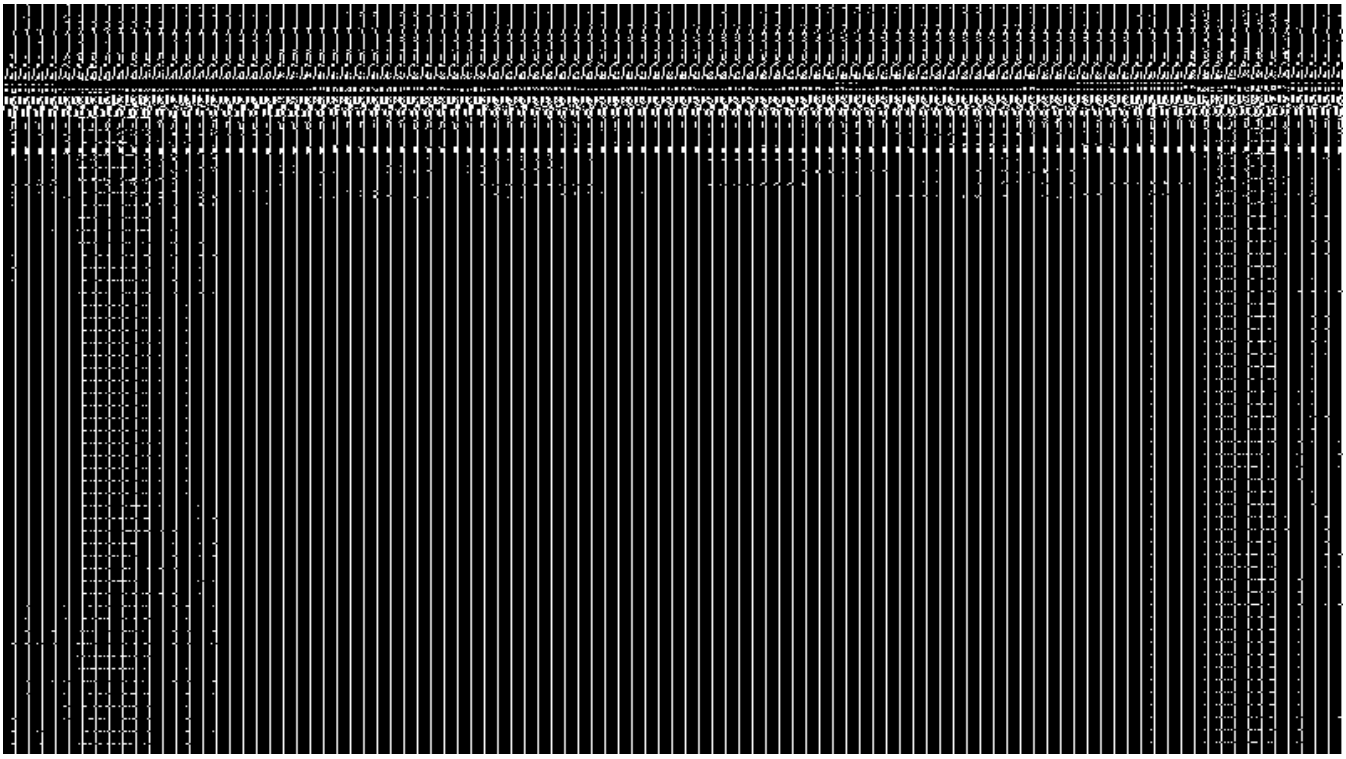

Image source:

Meyer IH. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psycho Bull* Sept 2003;129(5):674-679.

Appendix 2: Martikainen's Schematic of Psychosocial Pathways (2002)

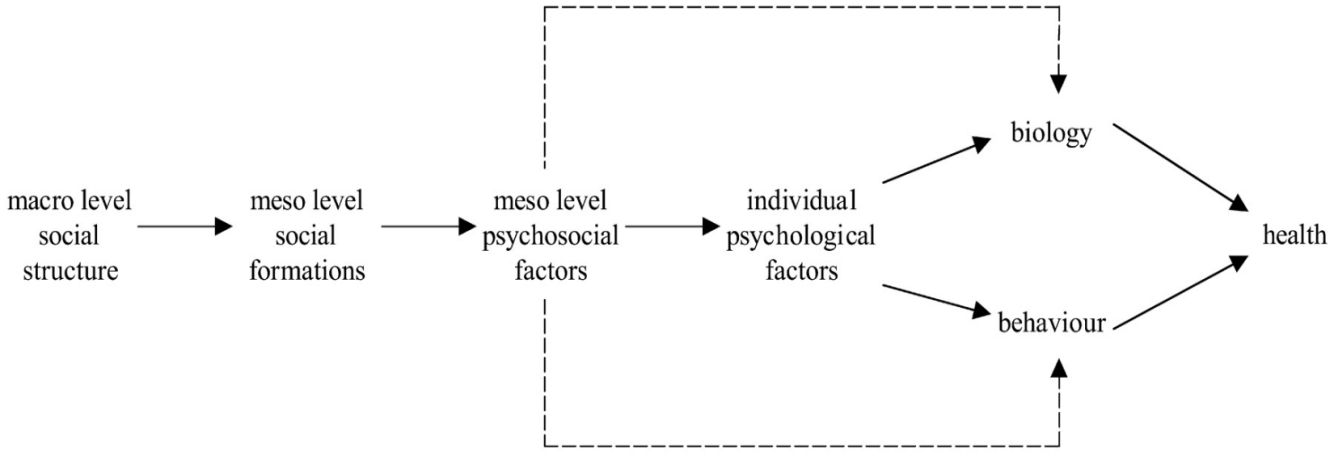

Image source:

Martikainen P, Bartley M, Lahelma E. Psychosocial determinants of health in social epidemiology, editorial. *International Journal of Epidemiology* 2002;31:1091-1093.

Curriculum Vitae

Roxanne Longman Marcellin

RESEARCH INTERESTS

HIV/AIDS; social determinants of health; marginalized and minority populations; vulnerable groups; aging & the elderly; infectious disease; chronic disease; addictions & mental health; international development & global health; risk factor epidemiology; epidemiological & other health research methods; health & social policy; Autism; childhood health and disease.

EDUCATION

2011; **M. Sc. Epidemiology & Biostatistics**; **The University of Western Ontario** (UWO)
Thesis topic: "Racism, Transphobia and HIV Vulnerability" (Supervisor: Dr. Greta Bauer)

- Gained knowledge of population health research, data analysis, and statistical methodologies.
- Used: PubMed & other databases; SAS 9.2; NVivo 9; RDSAT 6.0; InfoPath; MS Office

2009; **B. H. Sc. (Honours) Rural Health & Sociology**; **The University of Western Ontario**

- Improved knowledge of the research enterprise via courses related to health and social development; research-intensive community development courses; and courses in statistics.
- Used: PubMed & other informational databases; SPSS; MS Office

2005; **B. Sc. (Honours) Biology**; **McMaster University**
Thesis topic: "Investigation of H_2O_2 Induced Catalase Genes in *E. coli*" (Supervisor: Dr. H. Schellhorn)

- Involved growing bacteria, performing gene knockouts, and using PCR amplification techniques.
- Used: Informational databases; MS Office; Reference Manager

AWARDS AND ACCOMPLISHMENTS

2010 – 2011	**Canadian Institute of Health Research (CIHR) Master's Award – HIV/AIDS Community-Based Research;** The University of Western Ontario (UWO); $17,500
2010	**Graduate Thesis Research Award**; UWO
2009 – 2011	**Schulich Graduate Scholarship Research Award**; UWO
2006 – 2009	**Dean's Honours Distinction**; UWO
	Certificate of Recognition for Excellence in the Photovoice research method; UWO, Health & Aging

EMPLOYMENT AND EXPERIENCE

2010-2011 Research Assistant UWO, Epidemiology & Biostatistics
Using RDSAT and SAS software to complete tables of descriptive statistics for the Trans PULSE project
Increase the efficiency of knowledge, translation and exchange for the project

2009- 2010 Research Assistant UWO, Epidemiology/Biostatistics
Collaborated as a member of a multi-cultural Black, African and Caribbean Canadian Health Team; writing grants, producing documents for ethics review, performing literature searches and producing two documents for community partners – the Regional HIV/AIDS Connection, previously called the AIDS Committee of London; and the London Cross Cultural Learner Centre.

2009 Research Assistant UWO, Epidemiology/Biostats
Located HIV- related articles in Pub Med and similar databases for miscellaneous projects, including the Trans PULSE project; and Canadian Blood Services v Kyle Freeman case. Prepared charts, tables, and summary reports for supervisor, Dr. G. Bauer.

2008 – 2009 Instructional Assistant UWO, Anatomy/Cell Biology
Prepared instructional material for conversion from PowerPoint to Articulate file formats

2008, May/June Rural Health Promotion Practicum Huron County Health Unit Spearheaded an evaluation of the Health Link Clinic and offered recommendations
Involved extensive research re: program evaluation; rural health needs; service utilization

2004 – 2005 Research Aid McMaster University
Prepared lab reagents and materials for the graduate students of a microbiology lab.
Developed a lab manual of equipment, reagents and protocols used in the lab.

COMMUNITY INVOLVEMENT

2010 AIDS Committee of London Volunteer ACOL/RHAC
Became more familiar with how to deliver HIV Basics information
Participated at the HIV/AIDS awareness booth at various festivals in London – e.g. Sunfest

2008 – 2009 HIV/AIDS Awareness Commissioner University Students Council
Coordinated student organizations and external bodies, initiated health promotion projects
Promoted the message of prevention to the university population

2007 – 2008 Alcohol & Drug Education Volunteer Student Health Services, UWO
Co-leader of the alcohol and drug awareness team at student health services
Developed and implemented health promotion initiatives on campus

CONFERENCES AND WORKSHOPS

1. Ontario HIV Treatment Network Annual Research Conference. Research at the Front Lines – Influencing Policy, Practice and Programs. November 14 & 15, 2011. **Oral Presentation: Self-Reported Racism, Transphobia, Their Intersection and Impact on Past-Year HIV-Related Sexual Risk Behaviour.** Impact: learned about new strides in HIV research within multiple disciplines; networked with other HIV/AIDS researchers; engaged in KTE.

2. Margaret Moffat Day Competition 2011 – The University of Western Ontario. March 29, 2011. **Poster & Oral Presentation: Racism, Transphobia and HIV Vulnerability.** *Impact*: improved public speaking skills; increased awareness of the Trans PULSE project; was updated about the kinds of projects in which colleagues in the faculty of sciences and medicine were involved.

3. Canadian Association for HIV Research (CAHR) - Canadian Conference on HIV/AIDS. May 13-16, 2010. Abstract accepted – The Black, African and Caribbean Canadian Health Study - Findings from Key-Informant Interviews. *Impact*: opportunity to present the results of the preliminary phases of the BLACCH Study in absentia.

4. Student Presentation Seminar – Middlesex-London Health Unit. Population Health Surveillance. April 7, 2010. **Oral Presentation: Attitudes about Violence against Women in Middlesex County, Ontario**. *Impact*: Carried out and presented an analysis of data from the Rapid Risk Factor Surveillance System (RRFSS). Improved upon public speaking skills.

5. Margaret Moffat Day Competition 2010 – The University of Western Ontario. March 31, 2010. **Poster & Oral Presentation: HIV-related Services Access by African, Caribbean and Black Canadians in Middlesex County, Ontario: A Needs Assessment - Proposal.** *Impact*: become aware of work of colleagues in the faculty of sciences and medicine; opportunity to improve speaking skills; and to increase awareness of project taking place in the community.

6. Opening Doors Conference – AIDS Committee of London. March 4, 2010. **Oral Presentation: The Black, African and Caribbean Canadian Health Study - Findings from Key-Informant Interviews**. *Impact*: participated in knowledge translation & exchange with community members, researchers, AIDS service workers, and health care providers.

7. Ontario HIV Treatment Network Research Conference. Research at the Front Lines - Finding New Solutions in HIV Prevention, Treatment and Support. November 16 &17, 2009. **Poster Presentation: The Black, African and Caribbean Canadian Health (BLACCH) Study - Abstract, Proposal & Preliminary Findings**. *Impact*: networked with other HIV/AIDS researchers; increased awareness of research being conducted in the field; knowledge exchange.

8. Ontario HIV Treatment Network. ACT Research Day. May 7 & 14, 2009. Topic: Making Sense of HIV Research. *Impact*: Attended workshops related to understanding the province's HIV/AIDS Surveillance Report & the value of needs assessments for HIV prevention programs.

9. Ontario HIV Treatment Network. Community-based Research & Ethics Capacity Building Workshop. May 6 2009. *Impact*: Learning experience. Listened to speakers working in the field of Community – Based Research. Participated in discussion groups about CBR & Ethics.

Artistic Works:

1. African Students Association Culture Show – The Art of Story-telling. Brescia College. February 6, 2010. **Oral Reading: The Black, African and Caribbean Canadian Health Study - Findings from Key-Informant Interviews – Community Views on HIV.** *Impact*: increased awareness of HIV/AIDS and within the student body.

2. Black History Month Closing Gala – February 25, 2010. **Oral Reading: The Black, African and Caribbean Canadian Health (BLACCH) Study - Findings from Key-Informant Interviews – A Scripted Reading.** Impact: increased awareness of HIV/AIDS within the community of London, Ontario; gained more community support for the BLACCH Study.